



Service Manual

PLASMA DISPLAY PANEL



PD-5010

CAUTION:

Before servicing this chassis, it is important that the service person read the "SAFETY PRECAUTIONS" and "PRODUCT SAFETY NOTICE" contained in this manual.

SPECIFICATIONS

- **Power** : AC 120V, 50/60Hz
480W (Typical)
5.4A (Maximum)
- **Signals**
 - Sync Range : Horiz : 15.5 to 93.8 kHz
(Automatic : step scan)
: Vert : 50.0 to 120 Hz
(Automatic : step scan)
 - Input Signals : RGB, HD*¹,
DVD*¹, DTV*¹
- **Input Terminals**
 - RGB : Visual 1 (Analog) : Mini D-sub 15-pin
Visual 2 (Analog) : BNC (R,G,B,H/CS,V)*²
Visual 3 (M-LINK) : MONITORLINK™
 - Video : Visual 1 : RCA-pin
Visual 2 : BNC
Visual 3 : S-Video: DIN 4-pin
 - DVD/HD/DTV : Visual 1 RCA-pin (Y,PB[CB],PR[CR])*¹
Visual 2 BNC (Y,PB[CB],PR[CR])*^{1*}
 - Audio : Stereo RCA x 3 (Selectable)
 - External Control : D-sub 9-pin (RS232C)
- **Sound Output** : 7W+7W at 6 ohms
- **Dimensions** : (W)49.5" (H)30.2" (D)4.68"
(W)1257 (H)766 (D)119 mm
- **Weight** : 98 lbs / 44.5 kg

*¹ HD/DVD/DTV Input Signals supported:

480P (60Hz)	480I (60Hz)
525P (60Hz)	525I (60Hz)
576P (50Hz)	576I (50Hz)
625P (50Hz)	625I (50Hz)
720P (60Hz)	1035I (60Hz)
1080I (50Hz)	1080I (60Hz)

*² The 5-BNC connectors are used as
RGB/PC2 and HD/DVD2 input.
Select one of them under "BNC SELECT".

- Weight and dimensions shown are approximate.
- Design specifications are subject to change without notice.

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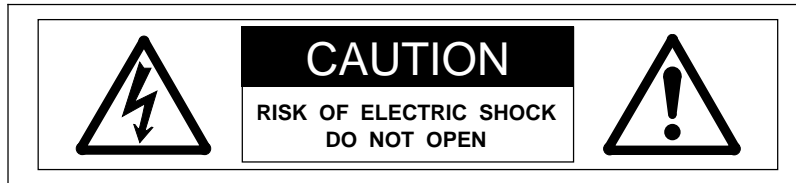
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SAFETY PRECAUTIONS



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT OPEN REAR COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside of this unit.



This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.



ATTENTION: POUR EVITER LES RISQUES D' ELECTROCUTION, NE PAS ENLEVER LE CONVERCLE ARRÈRE. AUCUN DES ELEMENTS INTERNES NE DOIT ETRE REPARÉ PAR L'UTILISATEUR. NE CONFIER L' ENTRETIEN QU'A UN PERSONNEL QUALIFIÉ.



L'éclair fléché dans un triangle équilatéral est destiné à avertir l'utilisateur de la présence, dans l'appareil, d'une zone non-isolée soumise à une haute tension dont l'intensité est suffisante pour constituer un risque d'électrocution.



Le point d'exclamation dans un triangle équilatéral est destiné à attirer l' attention de l'utilisateur sur la présence d'informations de fonctionnement et d'entretien importantes dans la brochure accompagnant l'appareil.



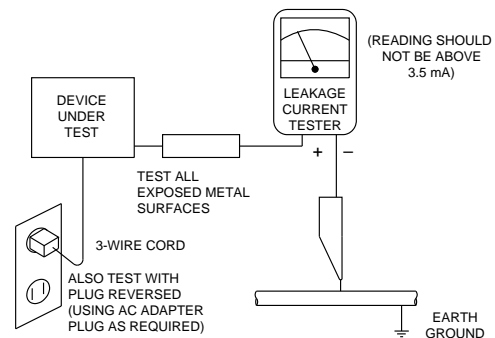
WARNING
HEATSINK MAY BE ENERGIZED.
TEST BEFORE TOUCHING.

SAFETY PRECAUTIONS

1. **Before returning an instrument to the customer**, always make a safety check of the entire instrument, including, but not limited to, the following items.

- a. Be sure that no built-in protective devices are defective and/or have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including, but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning.**
- b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such opening include, but are not limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.
- c. **Leakage Current Hot Check** — With the instrument completely reassembled, plug the AC line cord directly into a 240V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institutes (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1950. With the instrument AC switch first in the ON position and then in the OFF position, measure from a known earth ground (metal waterpipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle bracket, metal cabinet, screwheads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 3.5 milliamp. Reverse the instrument power cord plug in the outlet and repeat test. **ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER.**

AC Leakage Test



2. Read and comply with all caution and safety-related notes on or inside the Monitor cabinet, on the Projection Monitor chassis, or on the picture tube.
3. **Design Alteration Warning** — Do not alter or add to the mechanical or electrical design of this unit. Design alterations and additions, including, but not limited to, circuit modifications and the addition of the items such as auxiliary audio and/or video output connections might alter the safety characteristics of this Monitor and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and will make you, the servicer, responsible for personal injury or property damage resulting therefrom.
4. **Hot Chassis Warning** — **a.** Some MultiSync Monitor chassis are electrically connected directly to one conductor of the AC power cord and may be safely serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground. **b.** Some Plasma chassis normally have 85V AC (RMS), between chassis and earth ground regardless of the AC plug polarity. These chassis can be safely serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection. **c.** Some Plasma chassis have a secondary ground systems in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground system are electrically separated by insulating material that must not be defeated or altered.

SAFETY PRECAUTIONS

5. Observe original lead dress. Take extra care to assure correct lead dress in the following areas:
a. near sharp edges, **b.** near thermally hot parts—be sure that leads and components do not touch thermally hot parts, **c.** the AC supply, **d.** high voltage, and **e.** antenna wiring. Always inspect in all areas for pinched, out-of-place, or frayed wiring. Do not change spacing between components, and between components and the printed-circuit board. Check AC power cord for damage.
6. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.
7. **PRODUCT SAFETY NOTICE** —Many MultiSync Monitor electrical and mechanical parts have special safety-related characteristics some of which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified in this service data by shading with a ⚠ mark on schematics and by shading or a ⚠ mark in the parts list. Use of a substitute replacement part that does not have the same safety characteristics as the recommended replacement part in this service data parts list might create shock, fire, and/or other hazards.

PRECAUTIONS DE SECURITE

1. Avant de remettre un appareil à un client, faire toujours d'abord un examen de sécurité de l'appareil en entier comprenant, mais ne s'y limitant pas les points cités ci-dessous:

a. Vérifier qu'aucun des dispositifs de protection ne soit défectueux ou n'ait été endommagé pendant les travaux.

(1) Les volets protecteurs sur ce châssis ont été montés pour protéger aussi bien le technicien que le client. Remplacer correctement tous les volets protecteurs manquants, aussi bien que ceux qui ont pu être enlevés pour la commodité des travaux.

(2) Quand vous remettez le châssis ou d'autres assemblages ensemble dans le coffret, vérifier qu'ont été remis à leur place tous les dispositifs de protection, comprenant mais ne s'y limitant point, les boutons de contrôle non-métalliques, les feuilles d'isolation, les couverture/volets de l'ajustement et du compartiment, et l'isolation des réseaux résistance/condensateur. **Ne pas travailler sur cet appareil ni permettre qu'y soit effectué un travail sans que tous les dispositifs de protection n'y soient correctement installés fonctionnants.**

b. Bien vérifier qu'il n'y ait aucune ouverture sur le coffret qui ne puisse permettre à un adulte ou à un enfant d'y faire pénétrer ses doigts et attraper une décharge électrique.

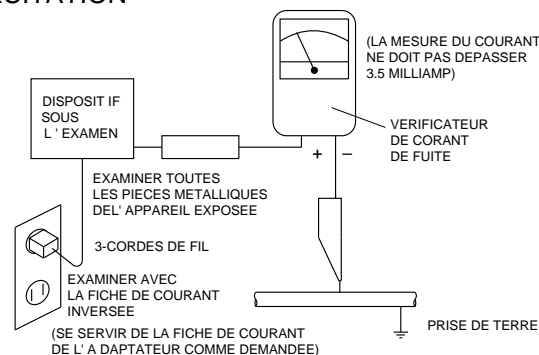
De telles ouvertures comprendraient sans pour autant s'y limiter (1) l'espace entre le tube à images et le coffret de l'appareil, (2) les espaces excessivement ouverts pour la ventilation et (3) la couverture arrière du coffret improprement fixée ou incorrectement protégée.

c. **Vérification de courant de fuite**

L'appareil ayant été complètement réassemblé, brancher-le à une prise de courant de 240V. (Ne pas se servir d'un transformateur d'isolation pendant ce test). Se servir d'un vérificateur de courant d'excitation ou d'un système de mesure conforme aux normes ANSI (American National Standards Institute) C101.1 Leakage Current for Appliances et U. L (Underwriters Laboratories) 1950. Le bouton de l'appareil en position "Marche" et ensuite en position "Arrêt", mesurer à partir d'une prise de terre (métallique tuyauterie, conduite, etc...) à toutes les pièces métalliques de l'appareil exposées (antennes, poignet métalliques, coffren métallique, tête des vis, surfaces métalliques, traits de contrôle, etc.) surtout à toutes les pièces métalliques exposées qui peuvent reconduire le courant au châssis. En aucun cas, la mesure du

courant ne doit dépasser 3.5 milliamp. Inverser la fiche de courant de l'appareil dans la prise et répéter le test. **Tout mesurage ne s'arrêtant pas aux limites spécifiées ici comporte un risque de décharge électrique dangereux, qui doit être éliminé, avant que l'appareil ne soit remis au client.**

EXAMEN DE COURANT D'EXCITATION



2. Lire et respecter toutes les mises en garde et notes de sécurité à l'intérieur ou à l'extérieur du coffret du rétro-projecteur, sur le châssis du rétro-projecteur ou sur le tube à images.



3. Mise en garde contre la modification du dessin

Ne pas modifier ni ajouter à la pièce mécanique ou électrique du modèle. Des modifications ou additions, comportant, mais ne s'y limitant pas, des modifications des circuits et l'addition d'éléments tels que des auxillaires audio et/ou des branchements pour la prise de vidéo, pourrait éprouver la sécurité de ce rétro-projecteur et créer un risque pour l'utilisateur. Tout changement ou addition accomplie annulera la garantie du fabricant et va rendre votre service d'entretien, responsable des dommages corporels ou de biens en résultant.

4. Mise en garde contre le châssis sous tension

a. Certains châssis de rétro-projecteur sont électriquement reliés à un conducteur du fil de courant et ainsi peuvent ne comporter aucun risque sans un transformateur d'isolation seulement si la prise de courant est branchée, de manière que le châssis est relié à la prise de terre de la source de courant. Pour s'assurer que la prise de courant est correctement insérée, relever les mesures avec un voltmètre de courant entre le châssis et un point de prise de terre bien connu. Si le voltage indiqué est supérieur à 1,0V, débrancher et reinsérer la prise de courant dans la polarité contraire et une fois de plus remesurer le voltage potentiel entre le cassis et la prise de terre.

PRECAUTIONS DE SECURITE

- b. Certains châssis de moniteur ont habituellement 85V (RMS) entre le châssis et la prise de terre, en fonction de la polarité de la prise de courant. Ces châssis peuvent ne comporter aucun risque seulement avec un transformateur d'isolation inséré dans la ligne de puissance située entre de rétro-projecteur et la source d'électricité, cela pour la protection aussi bien du personnel que du matériel de vérification.
 - c. Certains châssis de rétro-projecteur ont un système secondaire de masse en addition avec le système principal de masse du châssis. Ce système secondaire de masse n'est pas isolé du courant électrique. Les deux systèmes sont électriquement séparés par du matériel d'isolation qu' on vérifiera bien qu'il ne soit ni altéré ni défectueux.
5. Vérifier la couverture originale en plomb. Accorder la plus grande attention à la couverture de plomb notamment aux endroits ci-dessous indiqués.
- a. Près des bords aigus
 - b. près des parties très chaudes
Vérifier que les composants et les plombs ne touchent pas les parties très chaudes telles que:
 - c. l'alimentation du courant
 - d. la haute tension
 - e. les fils de l'antenne
- Pousser l'inspection, à tous les endroits, à la recherche des cordes pincées, déplacées ou effilochées. Ne pas changer l'écartement entre composants, et entre composants et le tableau de circuit imprimé. Vérifier que le fil de conduite électrique est en bon état.
6. Les composants, parts (pièces) et/ou fils qui ont été trouvés surchauffés devraient être remplacés avec les composants, pièces et fils s'y reliant avec d'autre qui ont les mêmes spécifications que les originales. De plus, rechercher la cause du surchauffement et/ ou des dommages et si nécessaire, prendre les mesures propres pour prévenir tout risque potentiel.
- 7. Note sur sûreté de l'appareil**
- Beaucoup de pièce de rétro-projecteur, qu'elles soient électriques ou mécaniques, ont des dispositions de sécurité qui ne sont pas toujours évidentes d'une simple inspection visuelle et la protection qu'elles donnent nécessairement ne pourront être pas obtenues par les remplaçants avec des composants aux voltages ou watts plus élevés. Les pièces qui ont des caractéristiques particulières de sécurité sont identifiées avec un trait  marqué sur les schémas et sont ombragés ou comportent un trait  sur la liste des pièces. L'utilisation d'un produit substitutif qui n'aurait pas les mêmes caractéristiques comme il est recommandé dans ces données d'entretien pourrait provoquer une décharge électrique, un feu, et/ou d'autres dangers.

SAFETY PRECAUTIONS

1 . Cautions for disassembly

(1) For the wall-hang type

- During handling, try to support the set at its frame. Never touch the filter or glass surface. Assistant personnel on the front side should apply hands to the lower part of the casing. [If the casing receives an impact, the unseen side area of the module panel glass may be broken even though the module itself does not seem to have been broken. Therefore, support the frame by hand in order not to drop it.]

2. The least minimum cautions for product disassembly

- Secure a working space, arranged as wide as possible.
- Prior to disassembling the set, protect the acrylic surface with an air mat or the like.
- To prevent the thread ridges from being damaged, use an adequate screwdriver.
- Many screws are actually used. Therefore, use two or three containers where these screws can be kept . Never disassemble the inner parts of the module (pipes, etc.).
- When lifting the module from the set, two persons should stand on both sides of the module to hold the stable parts of the junction while they lift the module upright. (If dust or such foreign substance enters in between the module and the filter, moir* or similar problems can arise. In addition, once it enters, it is necessary to take careful measures not to damage the contamination area while removing contaminants.) [Please understand that the replacement of the module may call for an air-blast treatment (air brush) in a clean room.]
Complementary caution) In particular, if a conductive foreign matter (such as a metallic chip) is attached to the flexible cable of the module, there can be danger of the occurrence of a phenomenon like wire breakage that is caused by partition breakdown in the module. For this reason, it is necessary to bear in mind that the flow of air blast should be directed only in the predetermined direction at all times.

SAFETY PRECAUTIONS

(Notes)

The component by the name of “module” used in this product is defined as a section that is provided with a digital circuit board (including high-voltage parts) used to emit light in the glass panel part, excluding the surface acrylic filter or the tempered glass filter. It must be noted that it does never mean the glass panel part only.

TROUBLESHOOTING

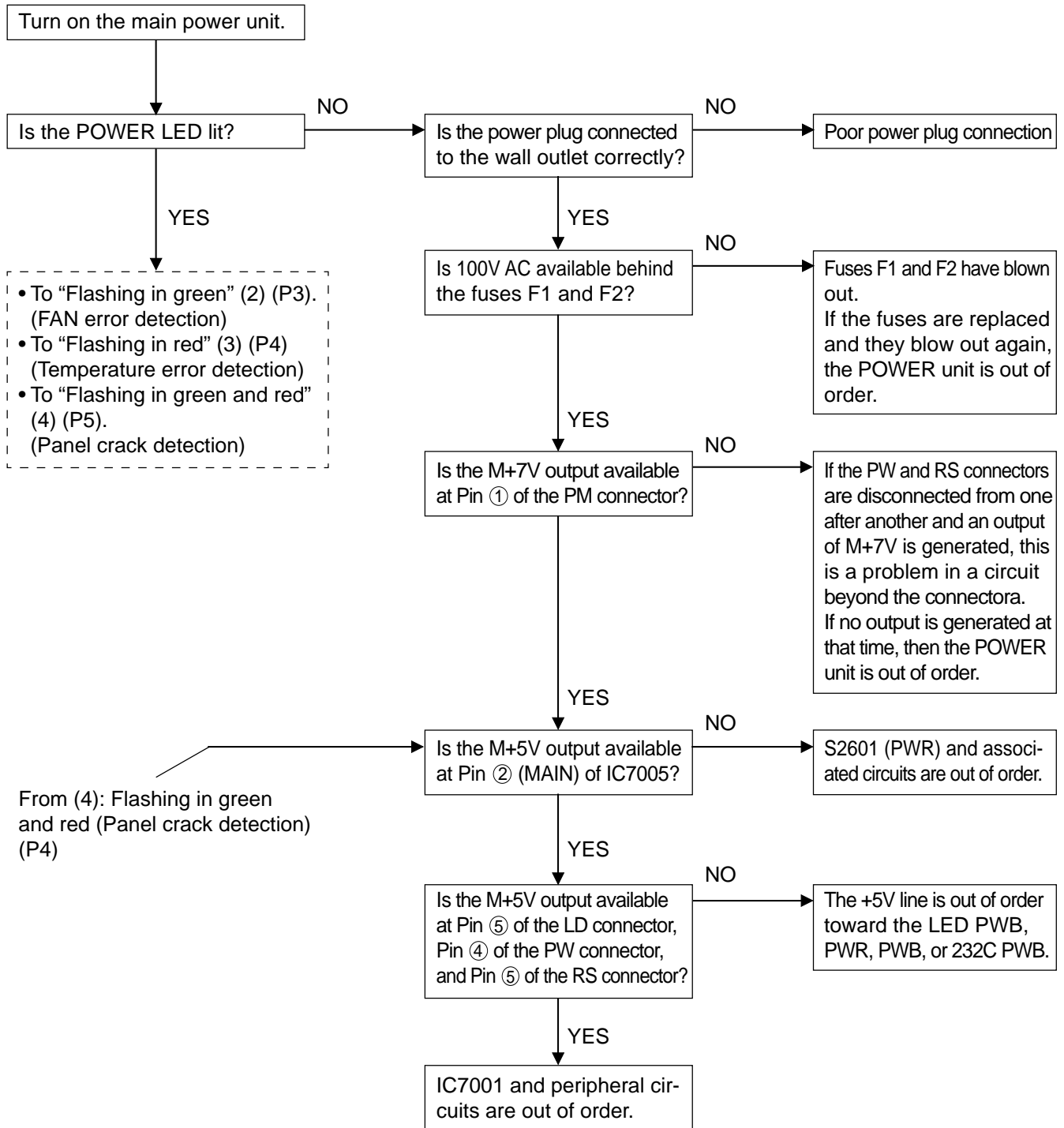
TROUBLESHOOTING

- In the case of abnormality in the POWER system, such as “No power available” or “Alarm (LED flashing)”
Go to → **1. Power failure (P2)**
- In the case of abnormality in the VIDEO system, such as “No picture” or “Picture errors”
Go to → **2. No picture displayed, picture errors (P6)**
- In the case of no audio output
Go to → **3. No audio output generated (P15)**

If set shuts down, reset the microprocessor by pressing the <Power On> and <Input> keys on the front panel at the same time. Hold for 5 to 6 seconds.

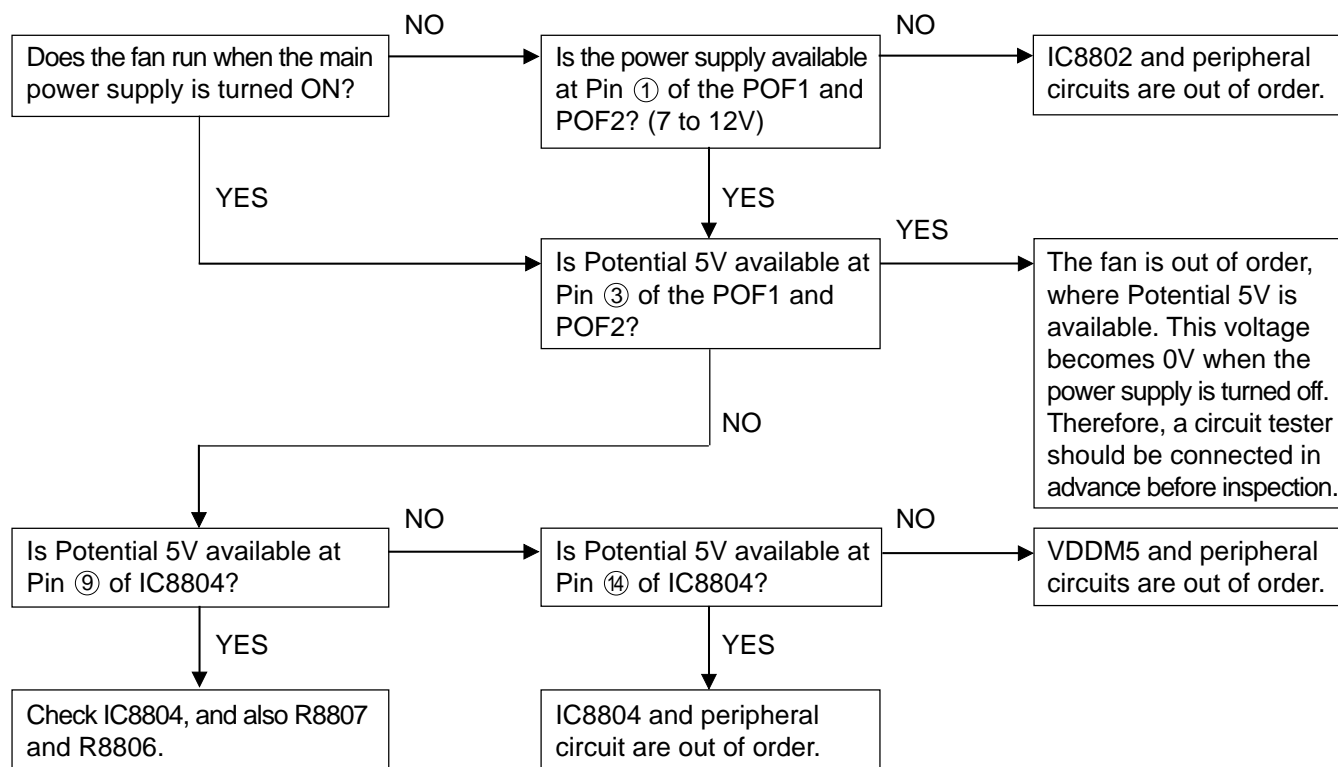
1. Power failure

(1) POWER is turned OFF. **Note: To Reset the Microprocessor, Press and hold the <Power On> and <Input> keys on the front panel at the same time. Hold for 5 to 6 seconds.**

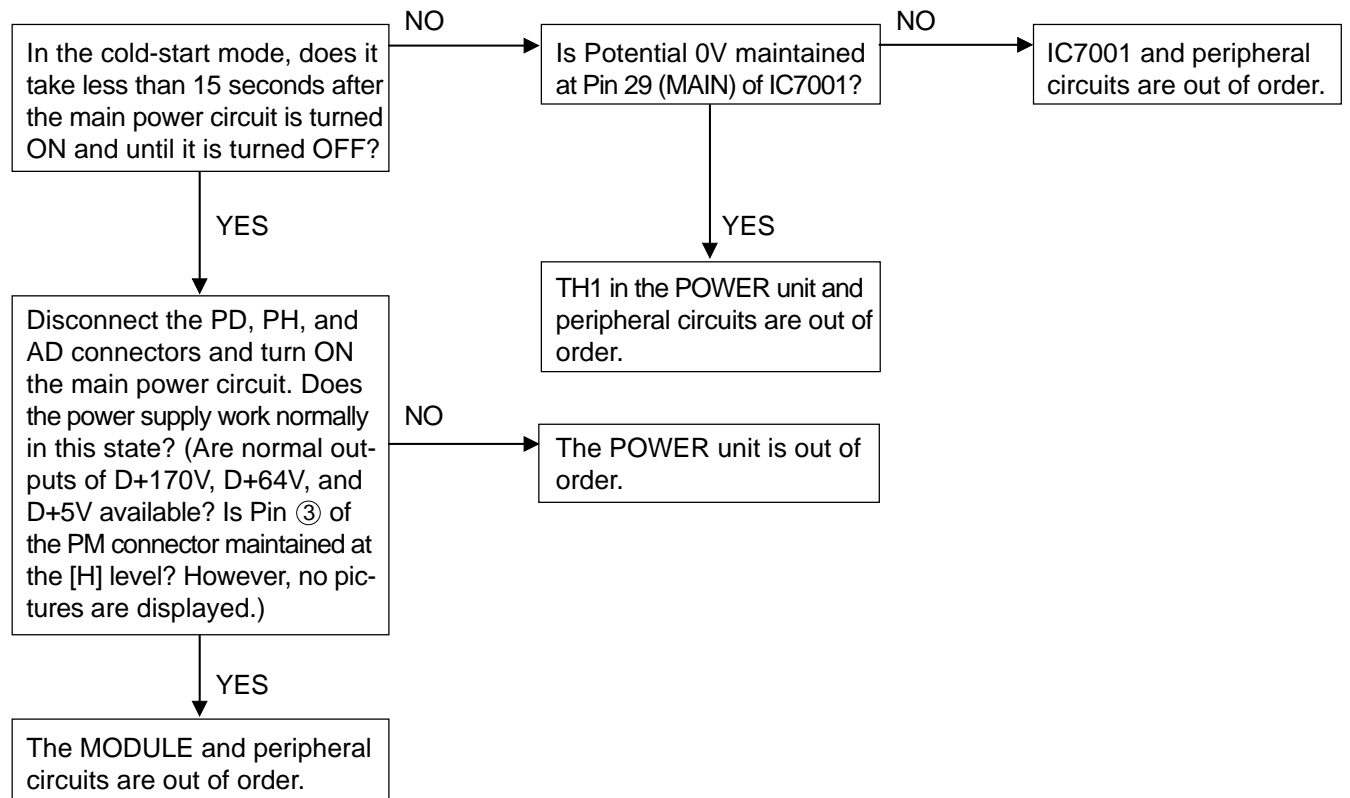


(Caution) When the LED is flashing (protector in operation), all power lines other than M+7 are automatically turned off. When checking the power lines other than the M+7V system, a circuit tester or the like should be connected to the measuring point in advance, for confirmation.

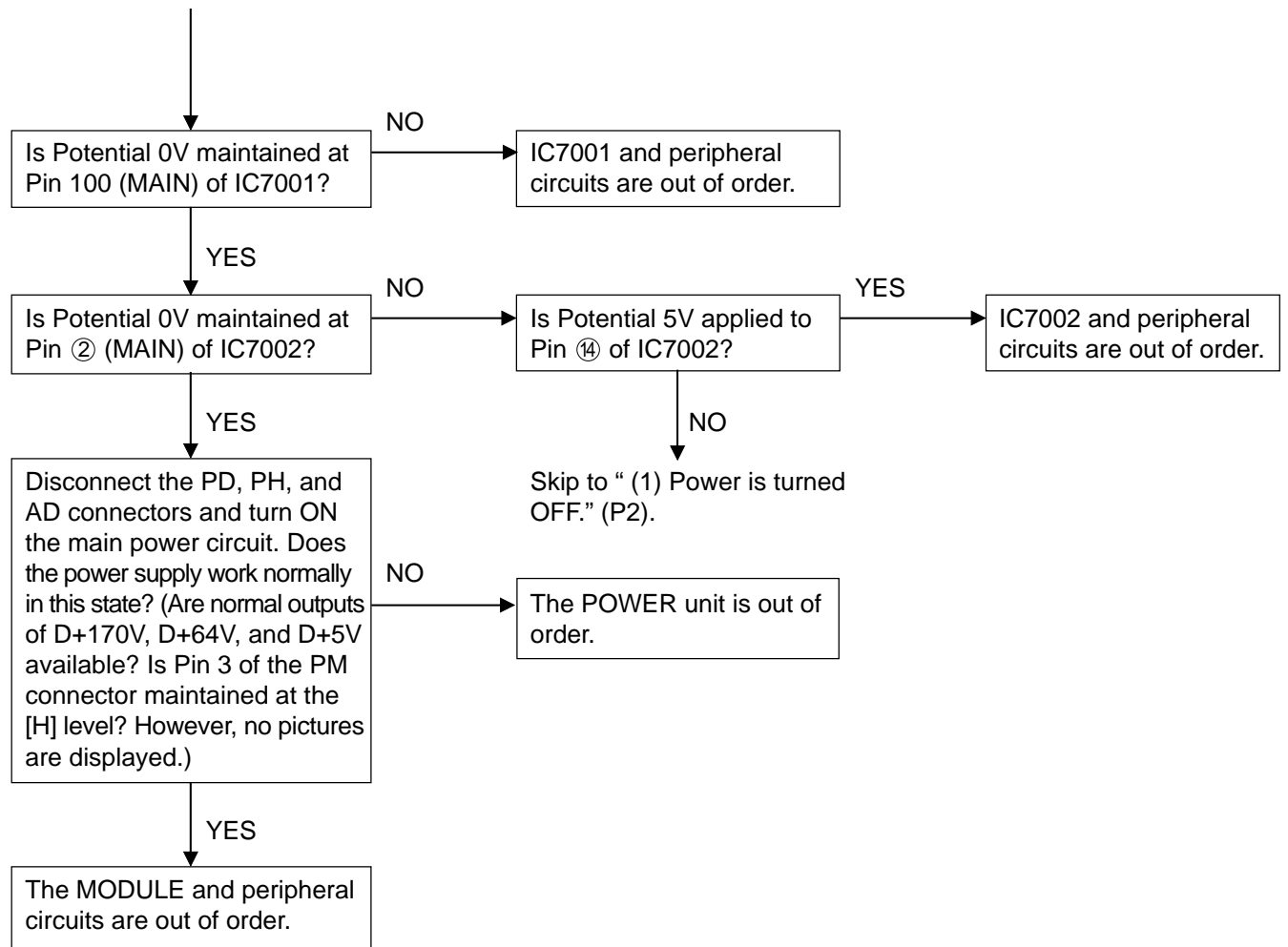
(2) Flashing in green (FAN error detection)



(3) Flashing in red (Temperature error detection)



(4) Flashing in green and red (Panel crack detection)



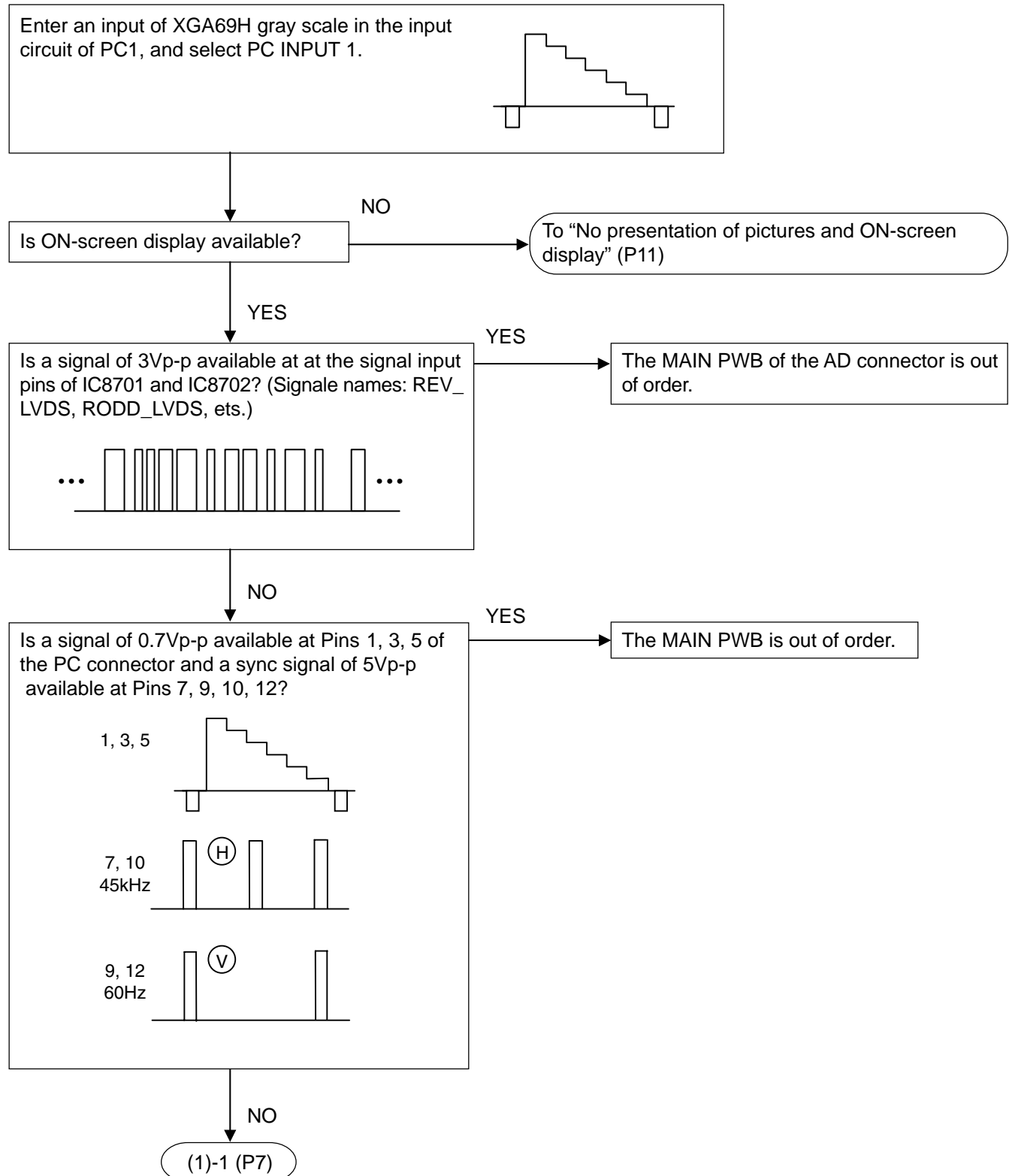
(Caution) How to cancel the alarm condition:

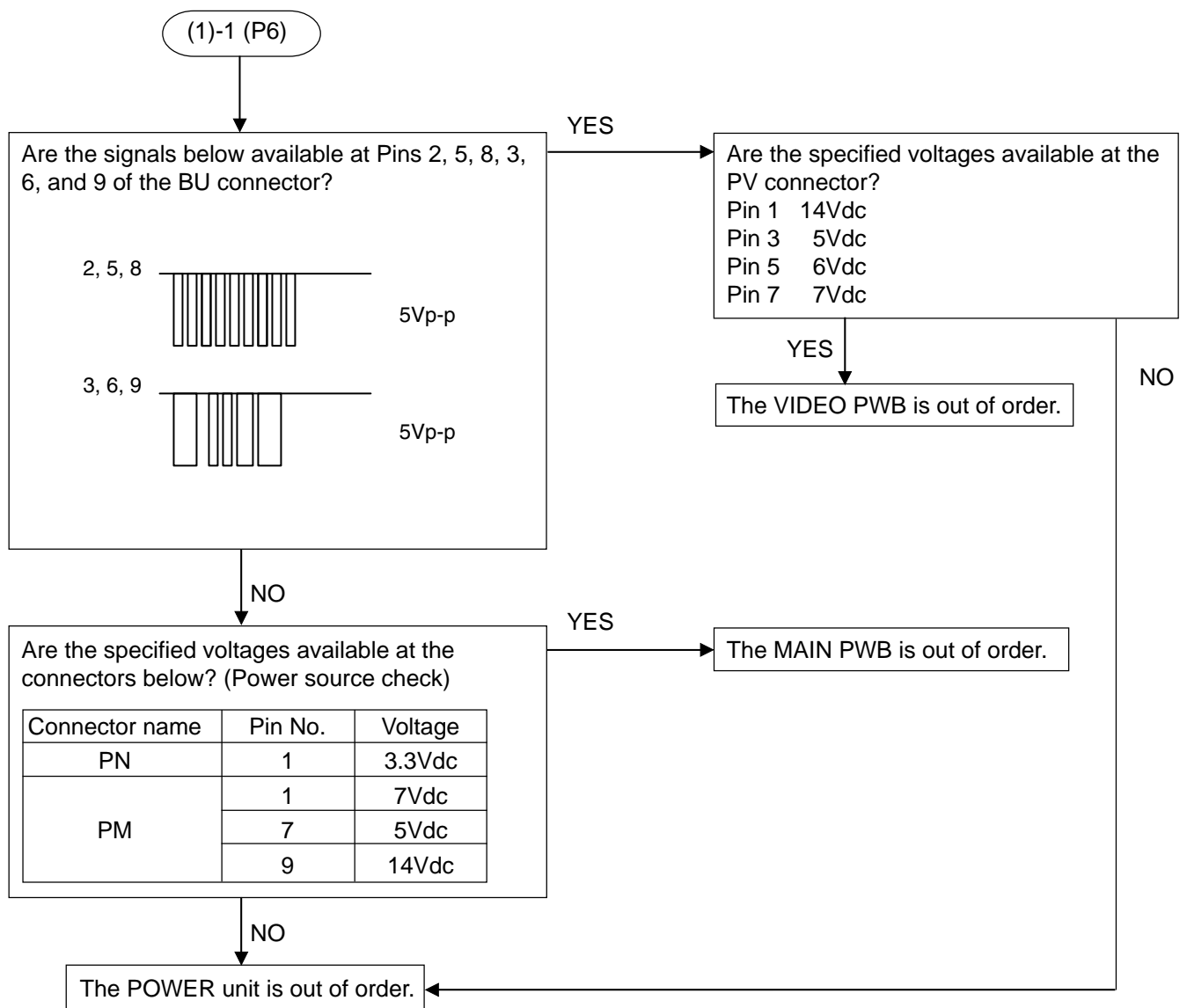
- While flashing in green and red occurs, the power supply cannot be reset by ON/OFF operation at the main power switch, remote control, and wall outlet.
- For alarm resetting, keep pressing the input selector key at the main unit of the set and move the mains power switch to [ON] at the main unit. In this state, it is necessary to keep pressing the input selector key of the main unit for more than 2 seconds.

2. No picture displayed and picture errors

(Caution) IPXXXX is installed in the MAIN PWB and the VIDEO PWB. These components are inserted in the power line. If there is any error occurring in the circuit, these components function to prevent the evolution of this problem to other areas. Accordingly, check whether the same voltage is generated at both ends of each component. (In normal state, the component is internally short-circuited.) If the same voltage is not generated, this means that the MAIN PWB is out of order. The same check is needed also for the DSP PWB.

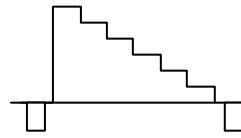
(1) No picture display of the PC signal only or both the VIDEO and PC signals



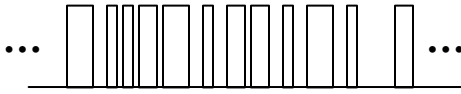


(2) No picture display of the VIDEO signal only

Enter an input of gray scale in the input circuit of VIDEO1, and select VIDEO1.



Is a signal of about 3Vp-p available at any of Pins 21 to 79 of the AM connector in the DSP PWB (GND terminal excluded)?

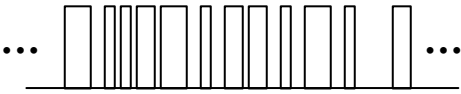


YES

The MAIN PWB is out of order.

NO

Is a signal of about 3Vp-p available at any of Pins 101 to 159 of the AM connector in the DSP PWB (GND terminal excluded)?



NO

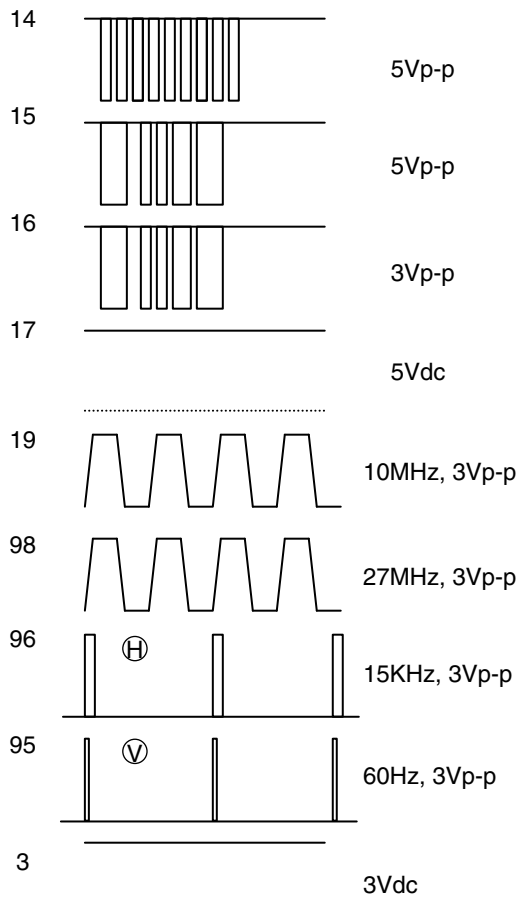
The MAIN PWB is out of order.

YES

(2)-1 (P9)

(2)-1 (P8)

Are the signals below available at Pins 14 to 17, 19, 98, 96, 95, and Pin 3 (IP8001) of the AM connector in the DSP PWB?

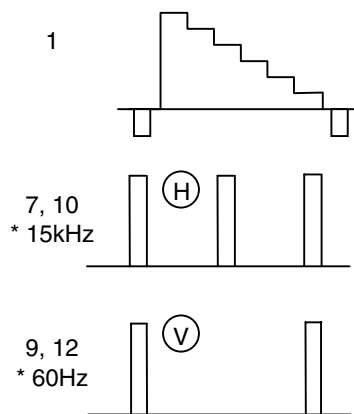


YES

The DSP PWB is out of order.

NO

Is a signal of 1Vp-p available at Pin 1 of the YU connector, and a sync signal of 5Vp-p available at Pins 7, 9, 10, and 12?



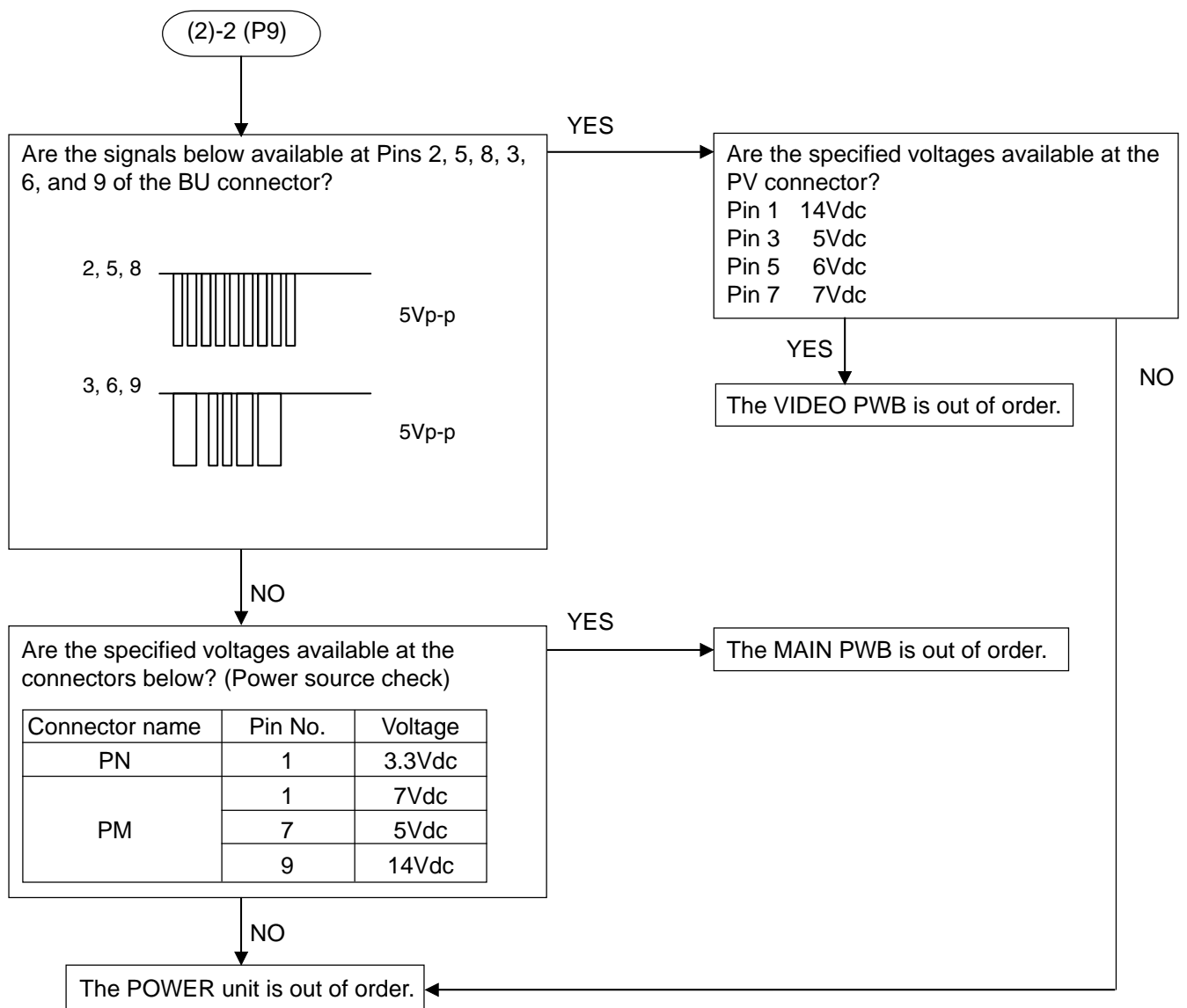
YES

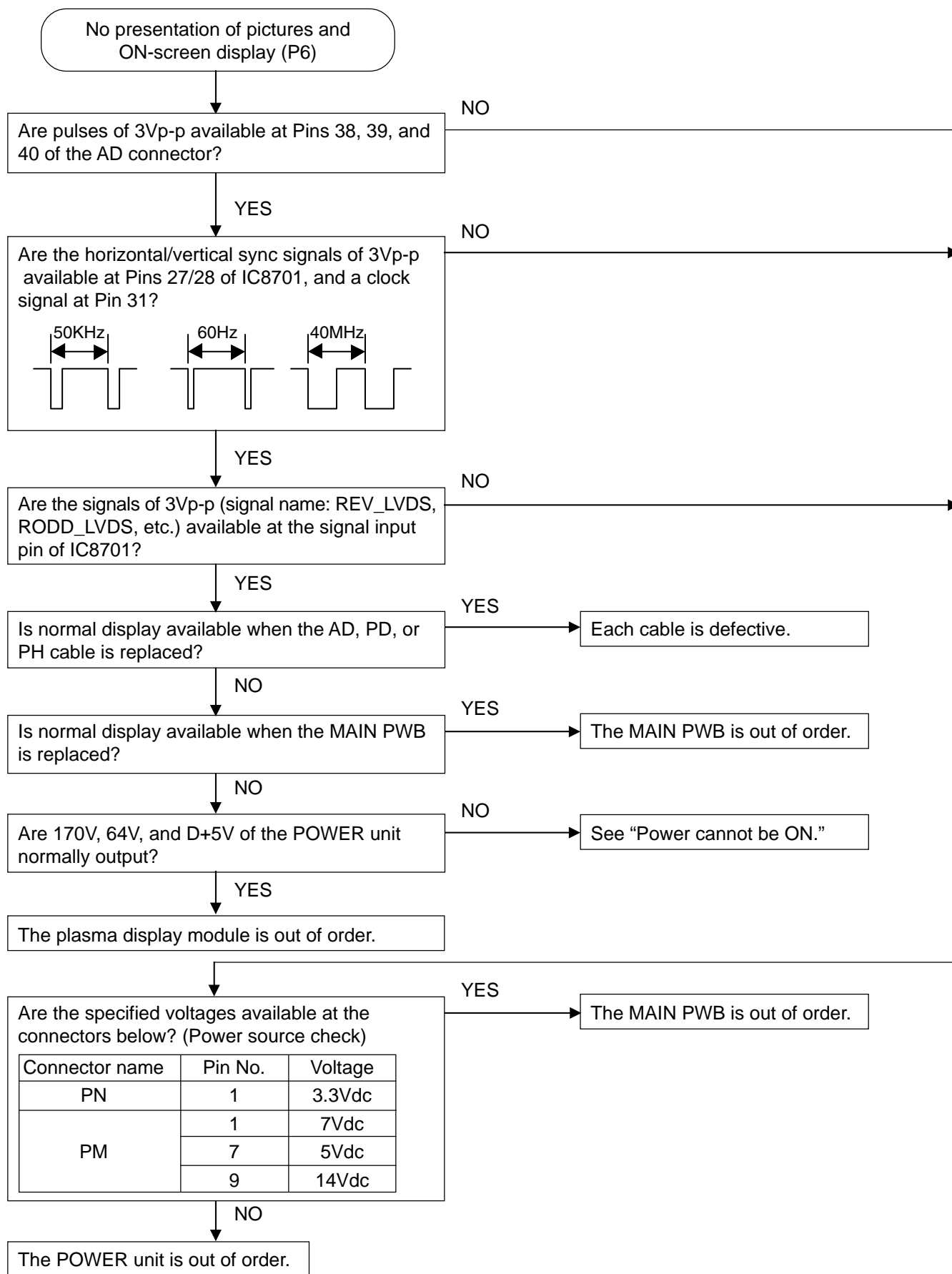
The MAIN PWB is out of order.

* In case of an NTSC input.

NO

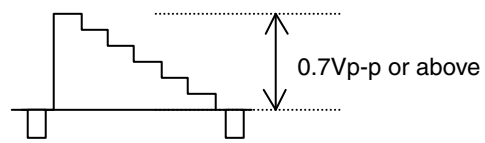
(2)-2 (P10)





(3) Picture errors

Display a picture in error mode. However, the video signal level shall be maintained above 0.7Vp-p.



YES

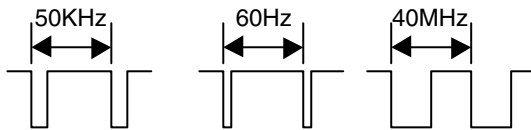
Are pulses of 3Vp-p available at Pins 38, 39, and 40 of the AD connector?

NO

YES

Are the horizontal/vertical sync signals of 3Vp-p available at Pins 27/28 of IC8701, and a clock signal at Pin 31?

NO



YES

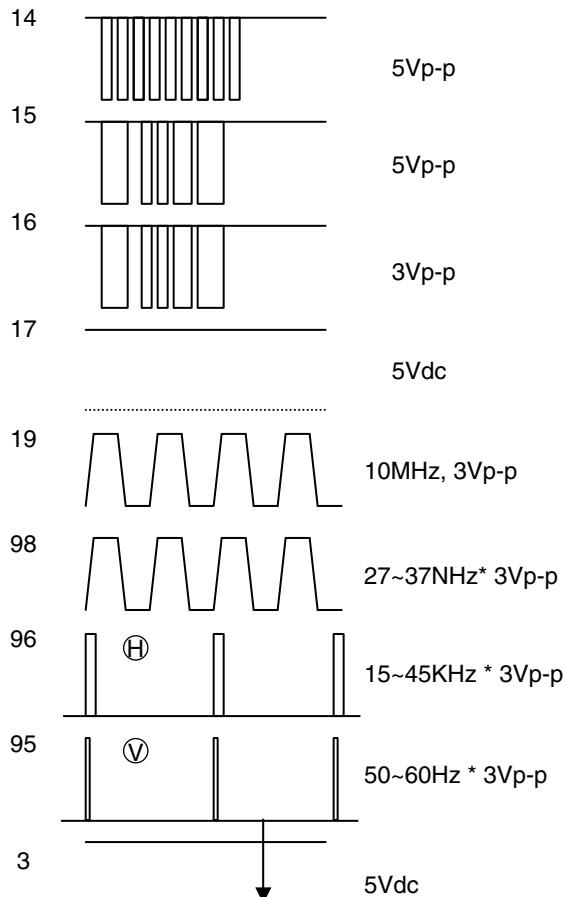
Is a picture error caused by PC input?

YES

NO

Are the signals below available at Pins 14 to 17, 19, 98, 96, and 95 of the AM connector and at Pin 3 (IP8001) in the DSP PWB?

NO



Are the specified voltages available at the connectors below?
(Power source check)

Connector name	Pin No.	Voltage
PN	1	3.3Vdc
PM	1	7Vdc
	7	5Vdc
	9	14Vdc

YES

The MAIN PWB
is out of order.

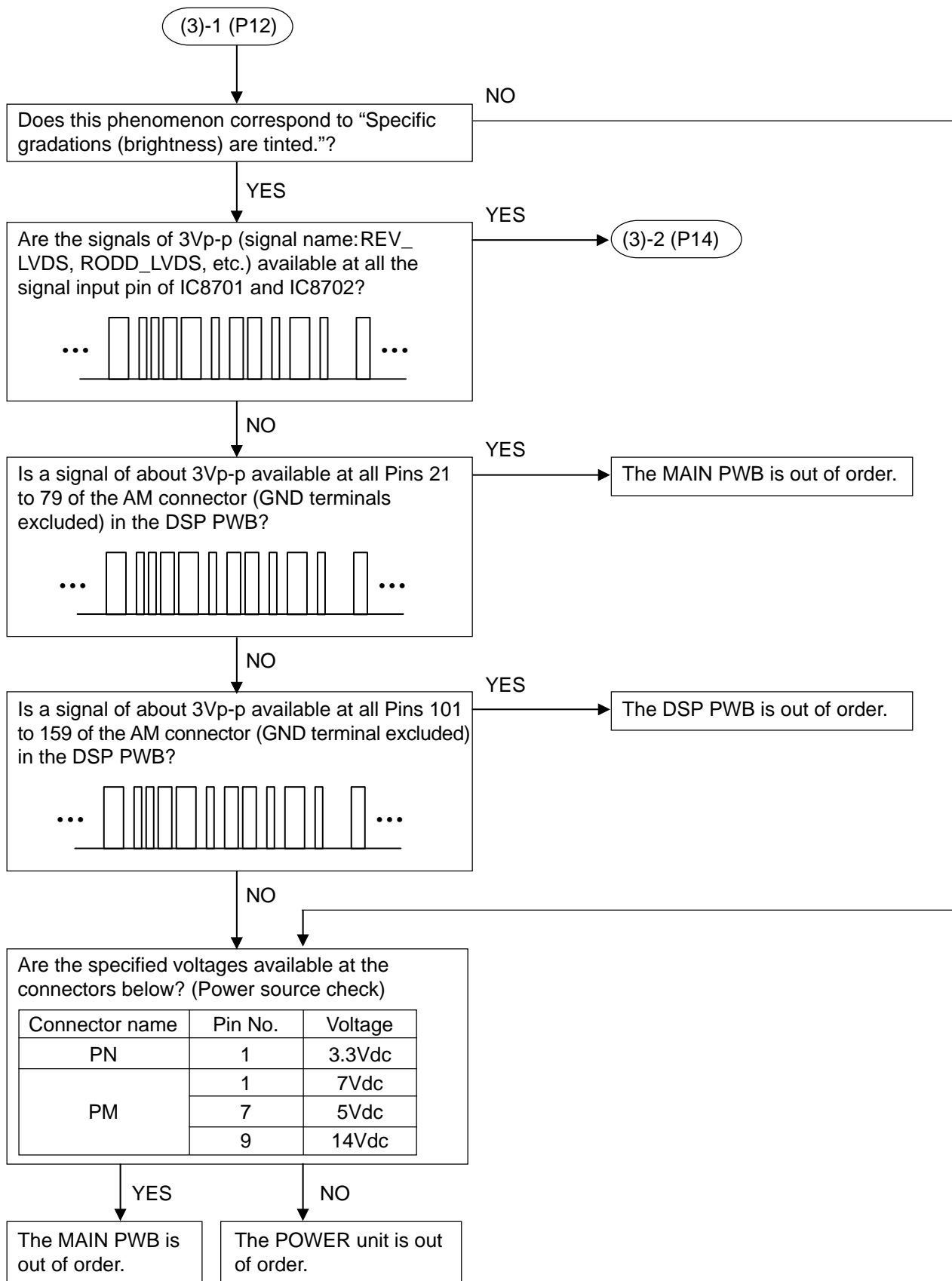
NO

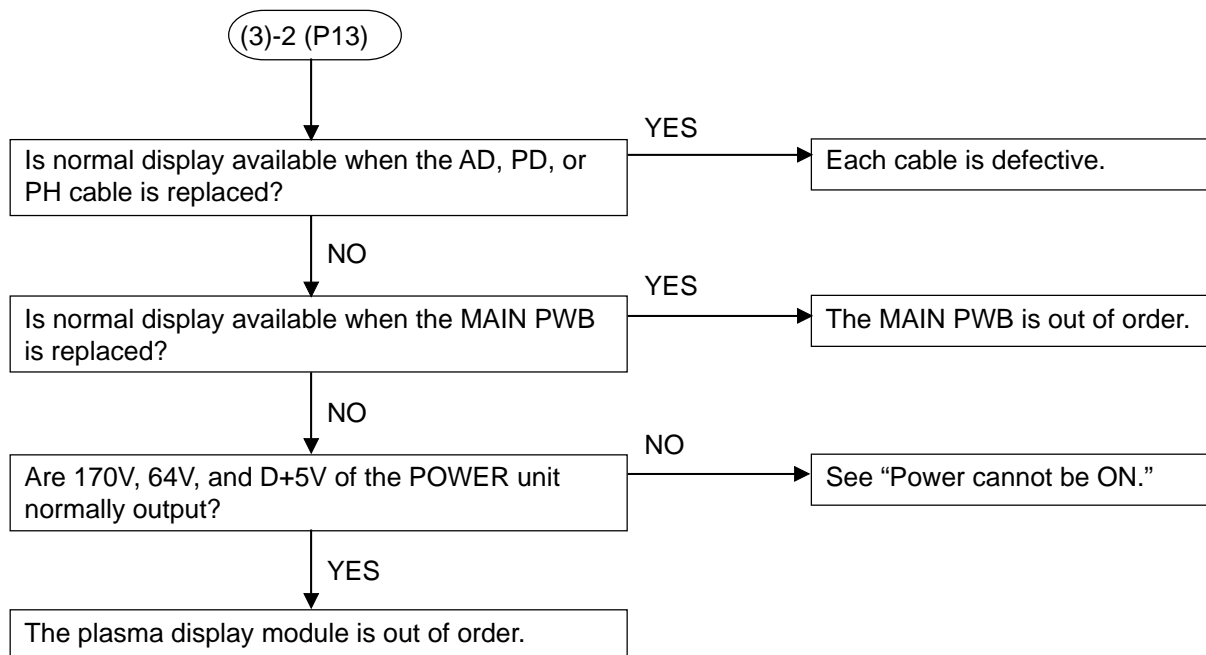
The POWER unit is out of order.

* Changed according to the input signal.

YES

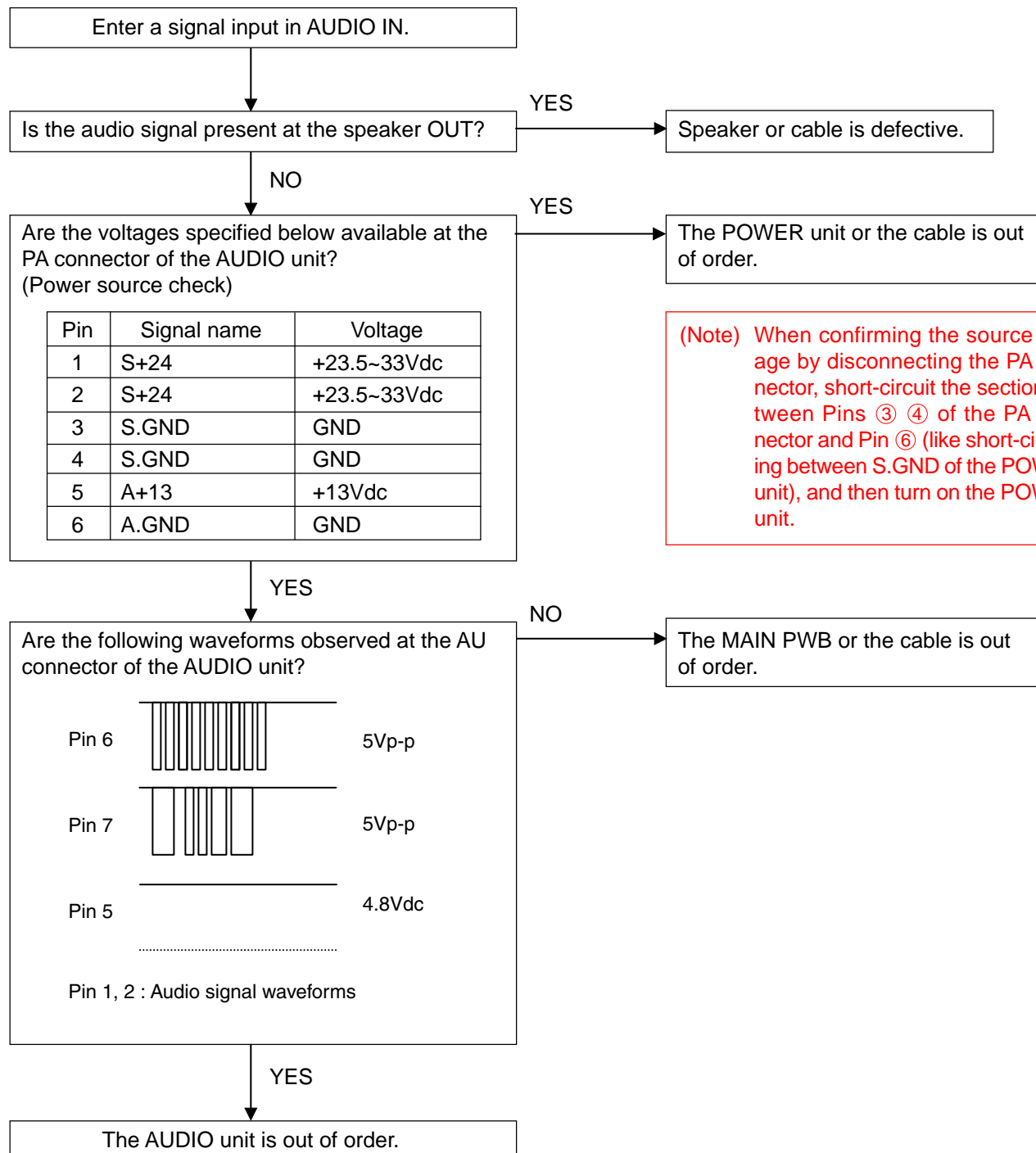
(3)-1 (P13)





3. No audio output generated

Note) This model is enabled to set up an audio input terminal for each video input terminal. No audio output is available unless the input terminal of the displayed pictures (example: VIDEO 1) coincides with that of audio (example: RGB 3). Therefore, analysis for troubleshooting should be carried out after the displayed video input terminal (example: VIDEO 1) has been made to coincide with the audio input terminal according to the instruction manual.



METHOD OF ADJUSTMENTS

Adjusting conditions

Adjustments should be carried out in accordance with the procedures described below. However, any adjustments other than the items A & B below are not required.

A. When the [PDP module] is replaced, adjust the sections according to the adjusting items [1 to 3] specified below.

(Caution) When the PDP module has been replaced, clear the USAGE TIME to "0" without fail, according to "how to clear the usage time" shown below.

B. When the [POWER unit] is replaced, adjust the sections according to the adjusting items [1 to 3] specified below.

* How to clear the usage time

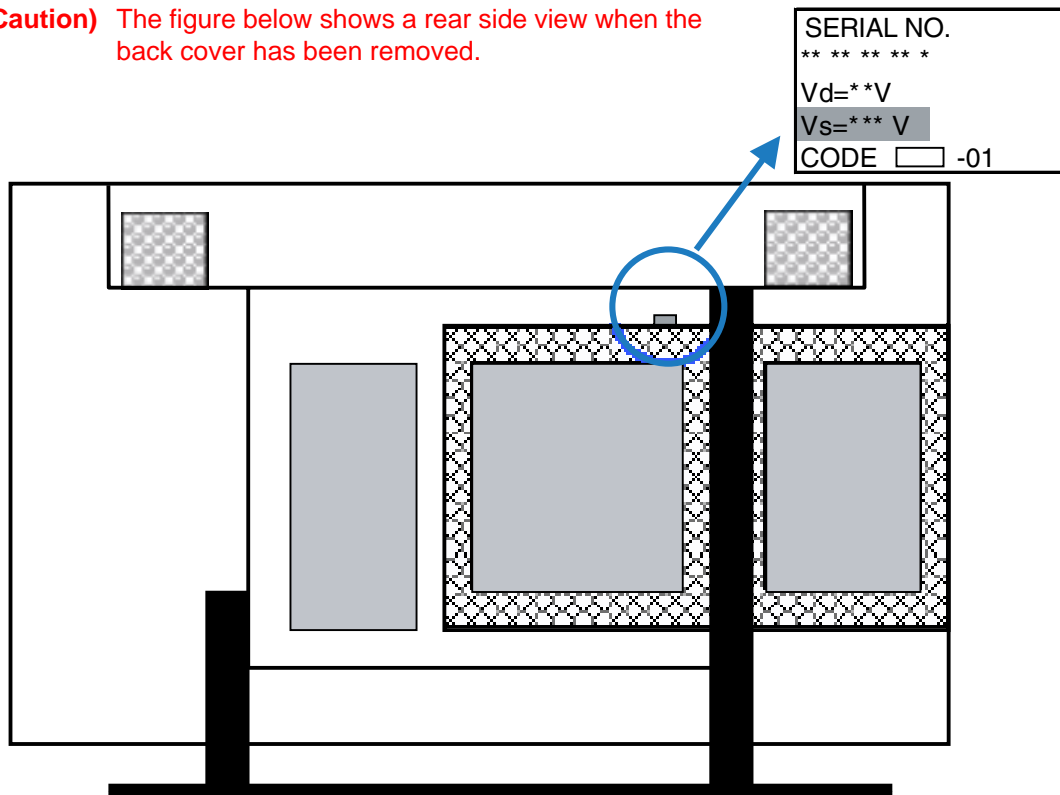
Assume the following factory mode by the use of the remote control. Press [MENU/ENTER] key six times to get the screen [USAGE TIME]. In this state, the integrated time up to the present time is displayed.

The integrated time is cleared to [0] when the remote control keys are pressed in the order of [MUTE] → cursor keys [^]→ cursor keys [V] → [SLEEP].

1. Adjustment of +170V

- (1) Using any video signal of VIDEO input, DVD/HD input, or RGB input, and display a color bar signal. Turn on the power switch of the main unit.
- (2) Turn the volume control (RV3) in the [D+170V ADJ] section of the power unit, and adjust the voltage value between TP3 (D+170V output) and TP2 (D.GND) of the power unit so that this voltage settles within the range of "specified voltage of the PDP module (Value Vs on the label shown below) ± 1 V."

(Caution) The figure below shows a rear side view when the back cover has been removed.



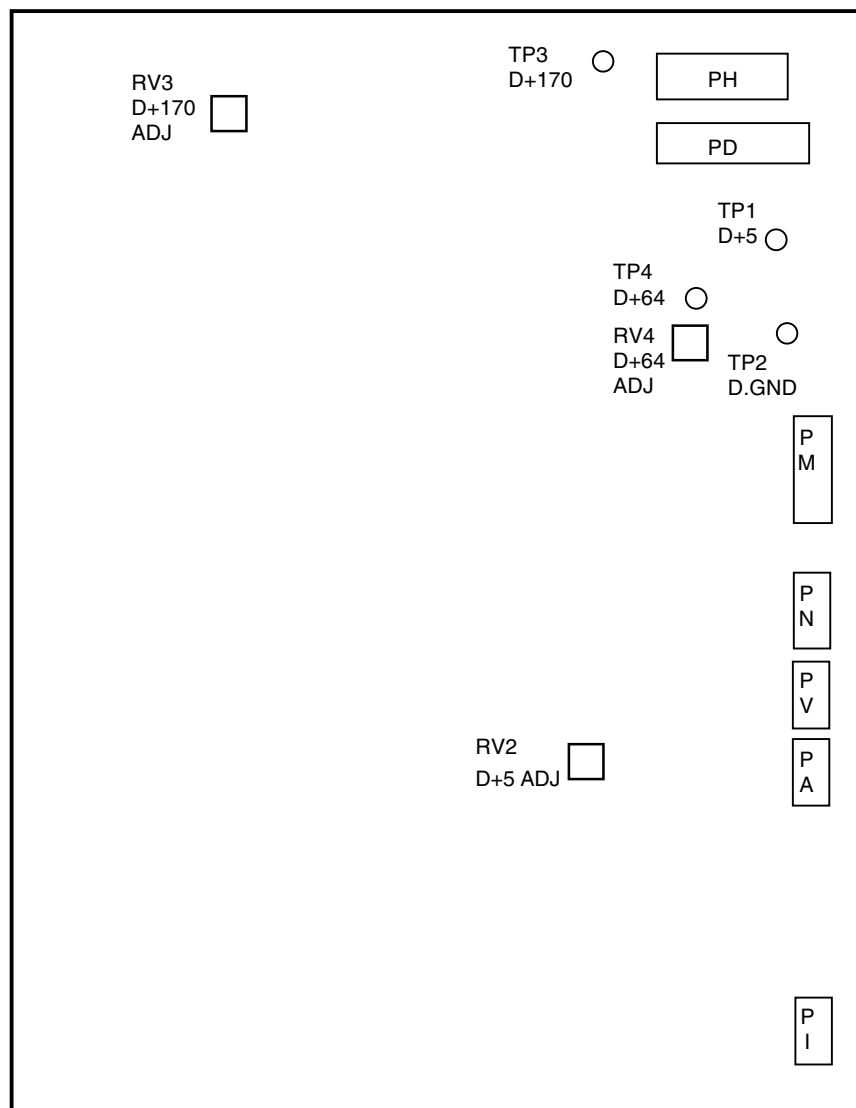
2. Adjustment of +64V

- (1) Using any video signal of VIDEO input, DVD/HD input, or RGB input, and display a color bar signal. Turn on the power switch of the main unit.
- (2) Confirm that the voltage at TP4 (D+60V output) and TP2 (D.GND) of the power unit is maintained at a voltage value (Vd value of the label described in Item 1 above) within $\pm 1V$, specified for the PDP module. If the voltage specified above cannot be secured, turn the volume control (RV4) in the [D+64V ADJ] block and adjust the voltage until it attains "the voltage specified for the PDP module (Value Vd on the label of the above-mentioned Item 1) $\pm 1V$."

3. Adjustment of +5V

- (1) Use any video signal of VIDEO input, DVD/HD input, or RGB input, and display a color bar signal.
- (2) Confirm that the voltage value between TP1 (+5V output) and TP2 (D.GND) of the power unit is maintained at "5.10 \pm 0.1V."
If the voltage specified above cannot be secured, turn the volume control (RV2) in the [D+5V ADJ] block and adjust the voltage until it attains "5.10 \pm 0.1V."

* POWER unit layout



[Morgue]

1. Signal Generator

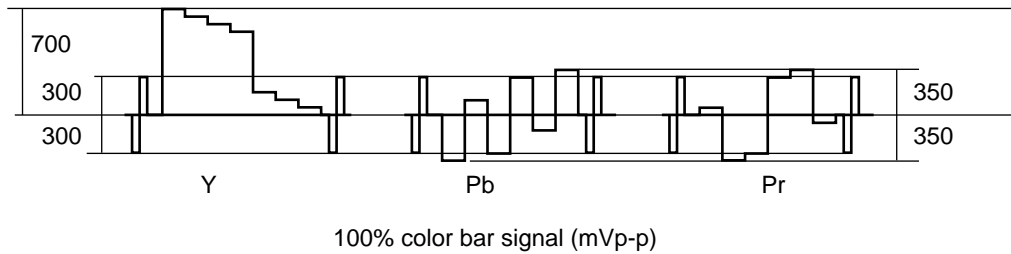
- (1) Digital RGB and component signal generator
 - Equivalent to the Video Generator LT1615 (made by LEADER)
 - Equivalent to the Panel Adapter LT9217 (made by LEADER)
 - Equivalent to the Video Encoder LT1606 (made by LEADER)
- (2) NTSC signal generator
 - Equivalent to the NTSC Pattern Generator LCG-403YC (made by LEADER)
- (3) PAL signal generator
 - Equivalent to the Color Bar Pattern Generator PM5518 (made by PHILIPS)

2. VIDEO input

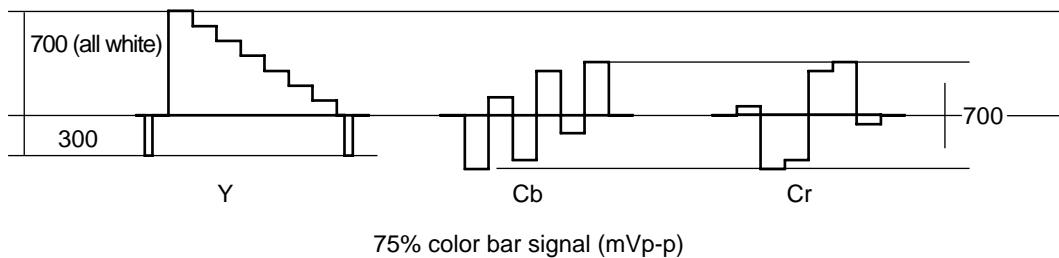
Input: Composite video input or S-terminal input for one system

3. DVD/HD/DTV input

3-1. HD: Y/Pb/Pr component input, tri-sync signal

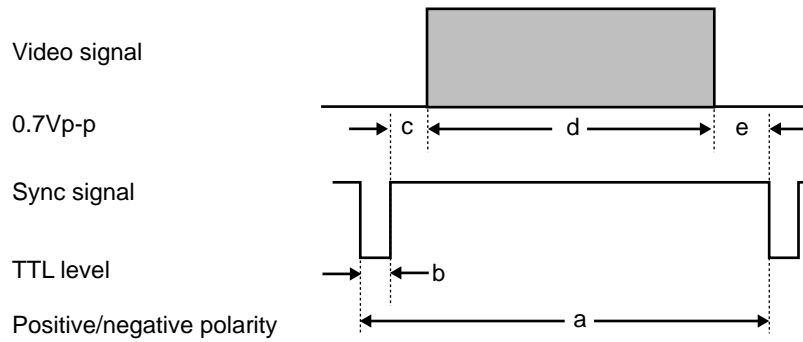


3-2. DVD: Y/B-Y/R-Y component input

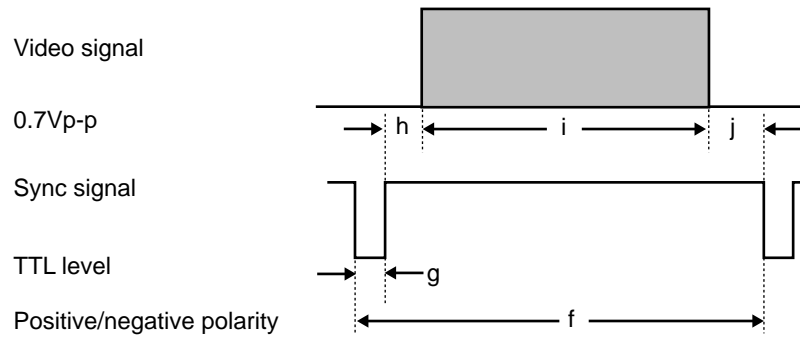


4. RGB/PC input

1) Horizontal sync period



(2) Vertical sync period



* The data a to j above are specified in the next page and thereafter, classified for various inspection signals.

5. RGB/PC signal timing table

PC mode	1	2	3	4	5
Signal name	VU-6010 NTSC	VU-6010 PAL/SECAM	PC98 400@56Hz	IBM 400@70Hz	PC98 480@60Hz
Definition	640*240	768*288	640*400	640*400	640*480
Dot clock frequency (MHz)	12.214	14.752	21.053	25.175	25.175
H frequency (kHz)	15.734	15.557	24.826	31.469	31.469
V frequency (Hz)	59.94	50.39	56.423	70.086	59.94
H total (uS)	63.534	64.262	40.285	31.778	31.778
(dots)	776	948	848	800	800
H display period (uS)	52.4	52.06	30.4	25.422	25.422
(dots)	640	768	640	640	640
H front porch (uS)	1.146	1.288	2.803	0.675	0.596
(dots)	14	19	59	17	15
H sync pulse width (uS)	8.76	8.677	3.04	2.542	3.813
(dots)	107	128	64	64	96
H back porch (uS)	1.228	2.237	4.037	3.138	1.946
(dots)	15	33	85	79	49
V total (mS)	16.652	20.055	17.723	14.268	16.683
(line)	262	312	440	449	525
V display period (mS)	15.3	18.513	16.112	12.711	15.253
(line)	240	288	400	400	480
V front porch (mS)	0.191	0.321	0.282	0.413	0.191
(line)	3	5	7	13	6
V sync pulse width (mS)	1.144	1.093	0.322	0.064	0.064
(line)	18	17	8	2	2
V back porch (mS)	0.064	0.064	1.007	1.08	1.176
(line)	1	1	25	34	37
H sync polarity	Neg	Neg	Neg	Neg	Neg
V sync polarity	Neg	Neg	Neg	Neg	Neg
Scan type	Interlaced	Interlaced	Non Interlaced	Non Interlaced	Non Interlaced

PC mode	6	7	8	9	10
Signal name	MAC@13"	VESA 480@72Hz	VESA 480@75Hz	VESA 480@85Hz	XGA-2 480@75Hz
Definition	640*480	640*480	640*480	640*480	640*480
Dot clock frequency (MHz)	30.24	31.5	31.5	36.0	31.5
H frequency (kHz)	35	37.861	37.5	43.269	39.375
V frequency (Hz)	66.667	72.809	75	85.008	75
H total (uS)	28.571	26.413	26.667	23.111	25.4
(dots)	864	832	840	832	800
H display period (uS)	21.164	20.317	20.317	17.778	20.32
(dots)	640	640	640	640	640
H front porch (uS)	2.116	0.762	0.508	1.556	0.508
(dots)	64	24	16	56	16
H sync pulse width (uS)	2.116	1.27	2.032	1.556	3.048
(dots)	64	40	64	56	96
H back porch (uS)	3.175	4.064	3.81	2.222	1.524
(dots)	96	128	120	80	48
V total (mS)	15	13.735	13.333	11.764	13.333
(line)	525	520	500	509	525
V display period (mS)	13.714	12.678	12.8	11.093	12.19
(line)	480	480	480	480	480
V front porch (mS)	0.086	0.237	0.027	0.023	0.279
(line)	3	9	1	1	11
V sync pulse width (mS)	0.086	0.079	0.08	0.069	0.051
(line)	3	3	3	3	2
V back porch (mS)	1.114	0.739	0.427	0.578	0.813
(line)	39	28	16	25	32
H sync polarity	Sync on G	Neg	Neg	Neg	Neg
V sync polarity	Sync on G	Neg	Neg	Neg	Neg
Scan type	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced

PC mode	11	12	13	14	15
Signal name	VESA 600@56Hz	VESA 600@60Hz	VESA 600@72Hz	VESA 600@75Hz	VESA 600@85Hz
Definition	800*600	800*600	800*600	800*600	800*600
Dot clock frequency (MHz)	36	40	50	49.5	56.25
H frequency (kHz)	35.156	37.879	48.077	46.875	53.674
V frequency (Hz)	56.25	60.317	72.188	75	85.061
H total (uS)	28.444	26.4	20.8	21.333	18.631
(dots)	1024	1056	1040	1056	1048
H display period (uS)	22.222	20	16	16.162	14.222
(dots)	800	800	800	800	800
H front porch (uS)	0.667	1	1.12	0.323	0.569
(dots)	24	40	56	16	32
H sync pulse width (uS)	2	3.2	2.4	1.616	1.138
(dots)	72	128	120	80	64
H back porch (uS)	3.556	2.2	1.28	3.232	2.702
(dots)	128	88	64	160	152
V total (mS)	17.778	16.579	13.853	13.333	11.756
(line)	625	628	666	625	631
V display period (mS)	17.067	15.84	12.48	12.8	11.179
(line)	600	600	600	600	600
V front porch (mS)	0.028	0.026	0.77	0.021	0.019
(line)	1	1	37	1	1
V sync pulse width (mS)	0.057	0.106	0.125	0.064	0.056
(line)	2	4	6	3	3
V back porch (mS)	0.626	0.607	0.478	0.448	0.503
(line)	22	23	23	21	27
H sync polarity	Pos.	Pos.	Pos.	Pos.	Pos.
V sync polarity	Pos.	Pos.	Pos.	Pos.	Pos.
Scan type	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced

PC mode	16	17	18	19	20
Signal name	MAC@16"	I/O dater wide	CEREB wide 1	VESA wide (NEC 1)	VESA wide (NEC 2)
Definition	832*624	852*480	864*480	848*480	1024*576
Dot clock frequency (MHz)	57.2832	34.006	42.526	33.75	47.25
H frequency (kHz)	49.725	31.722	37.5	31.02	35.795
V frequency (Hz)	74.55	59.966	75	60	60.059
H total (uS)	20.111	31.524	26.667	32.237	27.937
(dots)	1152	1072	1134	1088	1320
H display period (uS)	14.524	25.055	20.317	25.126	21.672
(dots)	832	852	864	848	1024
H front porch (uS)	0.559	0.659	0.508	0.474	0.339
(dots)	32	22	22	16	16
H sync pulse width (uS)	1.117	3.764	2.032	3.319	3.048
(dots)	64	128	86	112	144
H back porch (uS)	3.91	2.047	3.81	3.319	2.878
(dots)	224	70	162	112	136
V total (mS)	13.414	16.676	13.333	16.667	16.65
(line)	667	529	500	517	596
V display period (mS)	12.549	15.132	12.8	15.474	16.091
(line)	624	480	480	480	576
V front porch (mS)	0.02	0.378	0.027	0.193	0.056
(line)	1	12	1	6	2
V sync pulse width (mS)	0.06	0.095	0.08	0.258	0.112
(line)	3	3	3	8	4
V back porch (mS)	0.784	1.072	0.427	0.741	0.391
(line)	39	34	16	23	14
H sync polarity	Sync on G	Neg	Pos.	Pos.	Pos.
V sync polarity	Sync on G	Neg	Neg	Pos.	Pos.
Scan type	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced

PC mode	21	22	23	24	25
Signal name	VESA wide (NEC 3)	VESA wide (NEC 4)	CEREB wide 2	VESA 768@60Hz	VESA 768@70Hz
Definition	1280*720	1360*768	1024*600	1024*768	1024*768
Dot clock frequency (MHz)	76.5	85.5	51.2	65	75
H frequency (kHz)	45.106	47.712	37.879	48.363	56.476
V frequency (Hz)	60.142	60.015	60.317	60.004	70.069
H total (uS)	22.17	20.959	26.4	20.677	17.707
(dots)	1696	1792	1352	1344	1328
H display period (uS)	16.732	15.906	20	15.754	13.653
(dots)	1280	1360	1024	1024	1024
H front porch (uS)	0.627	0.749	1	0.369	0.32
(dots)	48	64	51	24	24
H sync pulse width (uS)	2.301	1.310	3.2	2.092	1.813
(dots)	176	112	164	136	136
H back porch (uS)	2.51	2.994	2.2	2.462	1.92
(dots)	192	256	113	160	144
V total (mS)	16.627	16.662	15.579	16.666	14.272
(line)	750	795	628	806	806
V display period (mS)	15.962	16.097	15.84	15.88	13.599
(line)	720	768	600	768	768
V front porch (mS)	0.089	0.063	0.026	0.062	0.053
(line)	4	3	1	3	3
V sync pulse width (mS)	0.177	0.126	0.106	0.124	0.106
(line)	8	6	4	6	6
V back porch (mS)	0.399	0.377	0.607	0.6	0.513
(line)	18	18	23	29	29
H sync polarity	Pos.	Pos.	Neg	Neg.	Neg.
V sync polarity	Pos.	Pos.	Pos.	Neg.	Neg.
Scan type	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced

PC mode	26	27	28	29	30
Signal name	VESA 768@75Hz	VESA 768@85Hz	MAC@19"	VESA 1024@60Hz	VESA 1024@75Hz
Definition	1024*768	1024*768	1024*768	1280*1024	1280*1024
Dot clock frequency (MHz)	78.75	94.5	80	108	135
H frequency (kHz)	60.023	68.677	60.24	63.981	79.976
V frequency (Hz)	75.029	84.997	74.93	60.02	75.025
H total (uS)	16.66	14.561	16.600	15.63	12.501
(dots)	1312	1376	1328	1688	1688
H display period (uS)	13	10.836	12.8	11.852	9.481
(dots)	1024	1024	1024	1280	1280
H front porch (uS)	0.203	0.508	0.4	0.444	0.119
(dots)	16	48	32	48	2
H sync pulse width (uS)	1.219	1.016	1.2	1.037	1.067
(dots)	96	96	96	112	144
H back porch (uS)	2.235	2.201	2.2	2.296	1.837
(dots)	176	208	176	248	248
V total (mS)	13.328	11.765	13.347	16.661	13.329
(line)	800	808	804	1066	1066
V display period (mS)	12.795	11.183	12.749	16.005	12.804
(line)	768	768	768	1024	1024
V front porch (mS)	0.017	0.015	0.050	0.016	0.013
(line)	1	1	3	1	1
V sync pulse width (mS)	0.05	0.044	0.050	0.047	0.038
(line)	3	3	3	3	3
V back porch (mS)	0.466	0.524	0.498	0.594	0.475
(line)	28	36	30	38	38
H sync polarity	Pos.	Pos.	—	Pos.	Pos.
V sync polarity	Pos.	Pos.	—	Pos.	Pos.
Scan type	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced

PC mode	31	32	33	34	35
Signal name	IDC-3000G PAL 625P	IDC-3000G NTSC 525P	HDTV-J	DTV (480P)	DTV (720P)
Definition	768*576	640*480	1920*1034	644*483	1280*720
Dot clock frequency (MHz)	29.687	24.39	74.25	24.37	74.25
H frequency (kHz)	31.389	31.47	33.75	31.469	45.000
V frequency (Hz)	50	59.9	60/60	59.94	60
H total (uS)	31.933	31.775	29.63	31.777	22.222
(dots)	948	775	2200	774	1650
H display period (uS)	25.87	26.24	25.86	26.427	17.239
(dots)	768	640	1920	644	1280
H front porch (uS)	0.269	0.41	0.59	0.75	0.943
(dots)	8	10	44	18	70
H sync pulse width (uS)	2.526	2.46	0.59	2.35	1.077
(dots)	75	60	44	57	80
H back porch (uS)	3.267	2.665	2.59	2.25	2.963
(dots)	97	65	192	55	220
V total (mS)	19.911	16.522	16.652	16.683	16.667
(line)	625	525	562/562	525	750
V display period (mS)	18.35	15.106	15.319	15.348	
(line)	576	480	517/517	483	720
V front porch (mS)	0.223	0.252	0.148	0.191	0.111
(line)	7	8	5	6	5
V sync pulse width (mS)	0.223	0.22	0.148	0.191	0.111
(line)	7	7	5	6	5
V back porch (mS)	1.115	0.944	1.037	0.953	0.444
(line)	35	30	35	30	20
H sync polarity	Neg	Neg	Neg	Neg	Neg
V sync polarity	Neg	Neg	Neg	Neg	Neg
Scan type	Non Interlaced	Non Interlaced	Interlaced	Non Interlaced	Non Interlaced

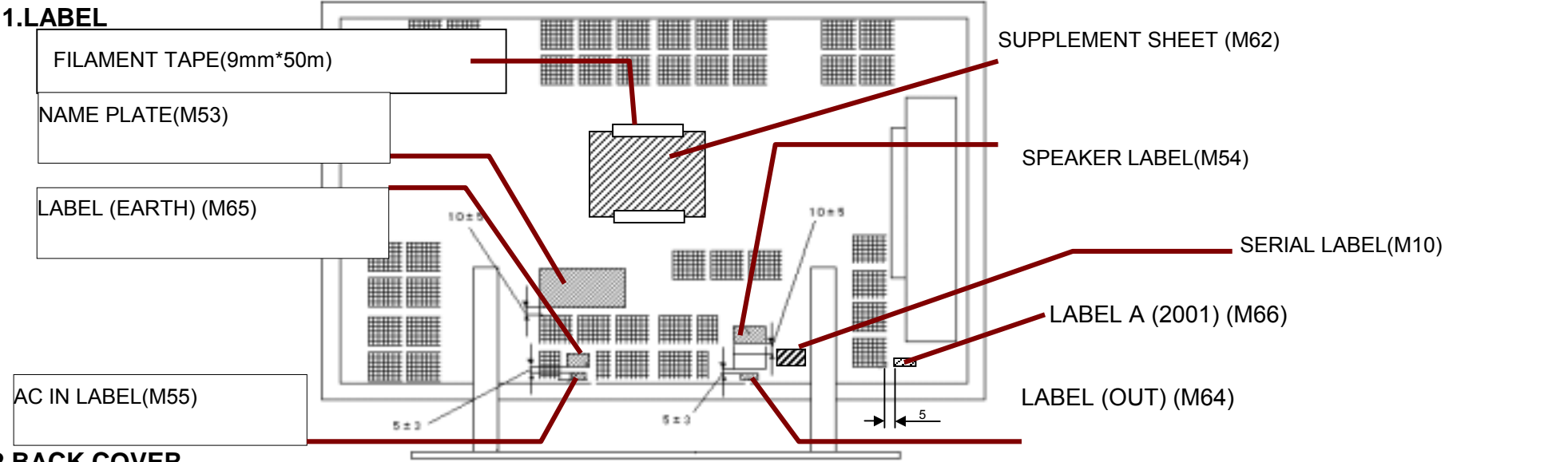
PC mode	36	37	38	39
Signal name	HDTV-W	SSPE	JSPE	MAC@12"
Definition	1920*1080	1024*512	852*480	1152*870
Dot clock frequency (MHz)	74.25	40	16	100
H frequency (kHz)	33.75	33.727	15.75	68.681
V frequency (Hz)	60/60	60.012	59.94	75.062
H total (uS)	29.630	29.650	63.750	14.560
(dots)	2200	1186	1020	1456
H display period (uS)	25.859	25.600	53.250	11.520
(dots)	1920	1024	852	1152
H front porch (uS)	0.593	0.600	1.250	0.320
(dots)	44	24	20	32
H sync pulse width (uS)	1.185	1.200	4.750	1.280
(dots)	88	48	76	128
H back porch (uS)	1.993	2.250	4.500	1.440
(dots)	148	90	72	144
V total (mS)	16.652/16.682	16.663	16.683	13.322
(line)	562/563	562	262.5/262.5	915
V display period (mS)	16.000/16.000	15.15	15.236/15.236	12.667
(line)	540/540	511	239/239	870
V front porch (mS)	0.059/0.074	0.178	0.064/0.096	0.044
(line)	2/2.5	6	1/1.5	3
V sync pulse width (mS)	0.148/0.148	0.148	0.191/0.191	0.044
(line)	5/5	5	3/3	3
V back porch (mS)	0.444/0.459	1.186	1.211/1.243	0.568
(line)	15/15.5	40	19/19.5	39
H sync polarity	Neg	Neg	Neg	Sync on G
V sync polarity	Neg	Neg	Neg	Sync on G
Scan type	Interlaced	Non Interlaced	Interlaced	Non Interlaced

METHOD OF DISASSEMBLY

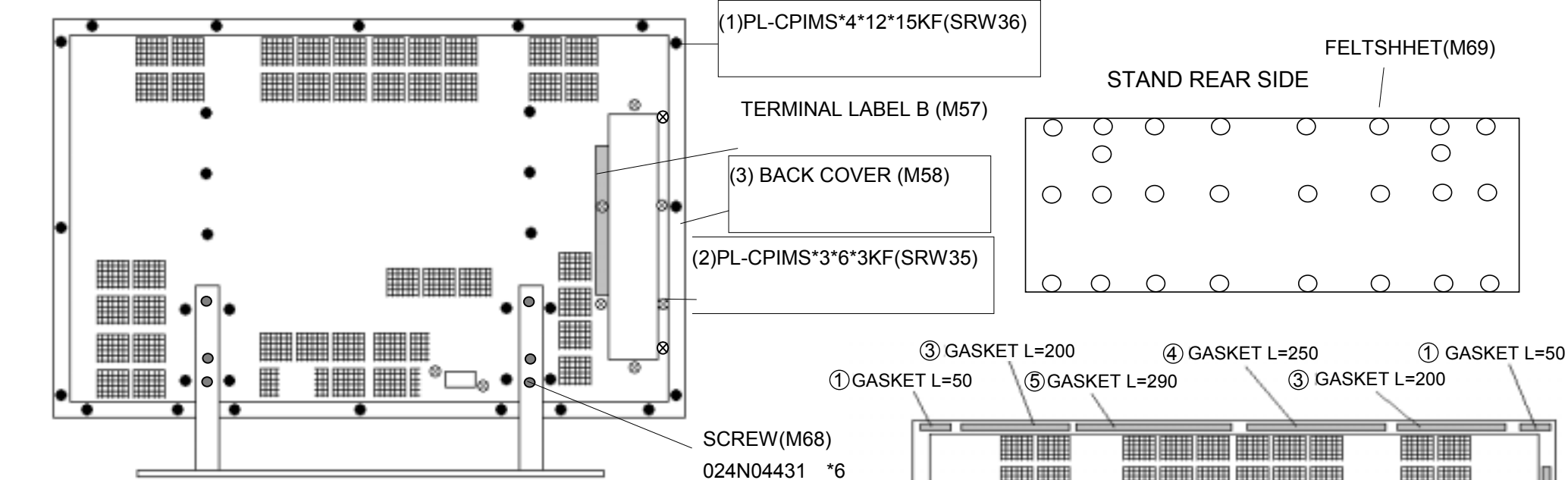
(Cautions)

1. Before disassembly, turn power off the main unit and pull out the power plug from the wall outlet.
2. Use a screwdriver with a fitting size. Otherwise, the screw threads may be damaged.
3. Reassembly can be carried out in the reverse order for disassembly. Refer to the disassembly procedures and forward reassembly in the reverse order.
4. The order for taking out the parts (or components) is indicated by the foregoing numeral that is attached to the name of each part (or component).
5. The wire connector symbol is indicated by two digits of Marking□□. Read CN-□□ when examining the table of parts.

1.LABEL

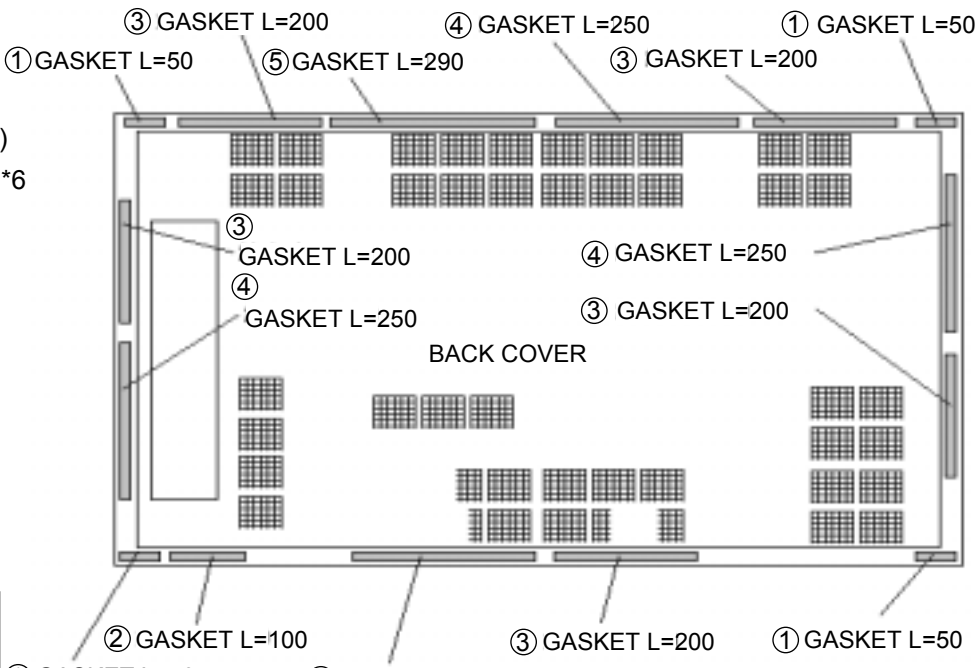


2.BACK COVER

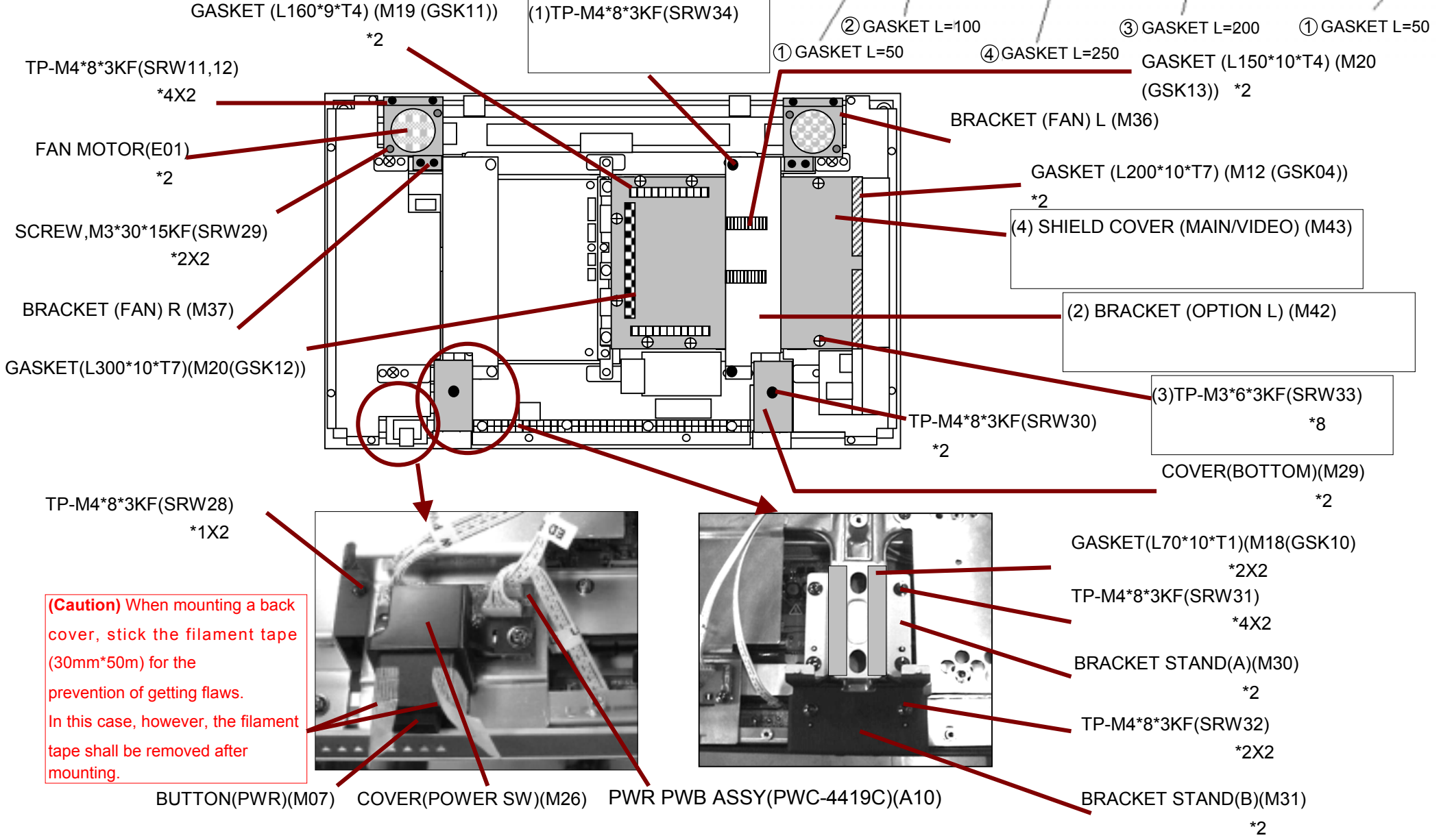


BACK COVER REAR SIDE

SYMBOL	PARTS NAME	PARTS NO.	Q'TY
① (GSK03)	GASKET (L50*10*T7)		4
② (GSK04)	GASKET (L200*10*T7)		5
③ (GSK05)	GASKET (L290*10*T7)		1
④ (GSK06)	GASKET (L250*10*T7)		4
⑤ (GSK07)	GASKET (L100*10*T7)		1



3.MAIN PWB/DSP PWB/VIDEO PWB



(Caution) At the time of assembly, it shall be tightened together with the round terminal of the connector CN-AD.

EDGE SADDLE(M06)
*3

(5)TP-M4*8*3KF(SRW13)
*6

(6) TERMINAL PANEL (VI) ASSY (M59)

Adhesion of the protective tape



(Caution) When mounting a back cover, stick the filament tape (30mm*50m) for the prevention of getting flaws. In this case, however, the filament tape shall be removed after mounting.

TP-M4*8*3KF(SRW34)
*2

BRACKET (OPTION R) (M44)

TP-M3*6*3KF(SRW19)
*2

TERMINAL PANEL (232) ASSY (M60)

PANEL PWB ASSY (PCB-5023B) (A03)

PL-CPIMS*3*6*3KF(SRW15)
*2

TP-M3*6*3KF(SRW20)
*4

232C PWB ASSY (PWC-4419A) (A08)

SCREW(UNC4-40/4-40)(SRW241)
*2

C/L BUTTON(M08)

PL-CPIMS*3*6*3KF(SRW202)
*2

• TERMINAL PANEL (VI) ASSY

(8) MAIN PWB ASSY (PCB-5022) (A01)

(9) DSP PWB ASSY (PCB-5022) (A06)

(7)TP-M3*6*3KF(SRW16,162)
*9

(12)TP-M3*6*3KF(SRW17)
*5

(13) VIDEO PWB ASSY(PCB-5023A) (A02)

[C]

[A]

SHIELD PLATE (VIDEO) (M46)

[D]

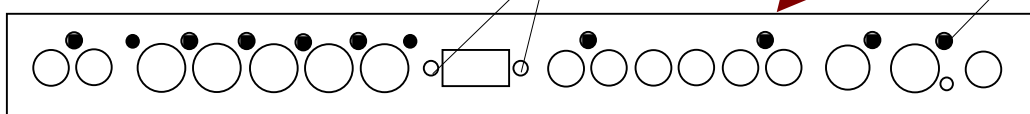
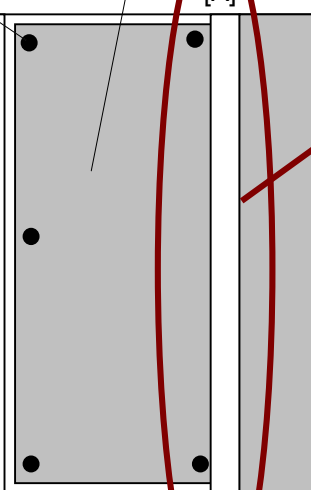
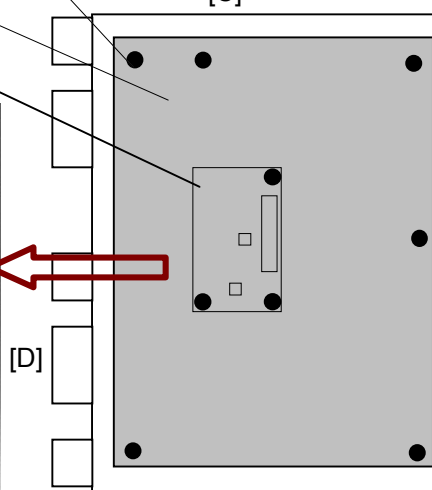
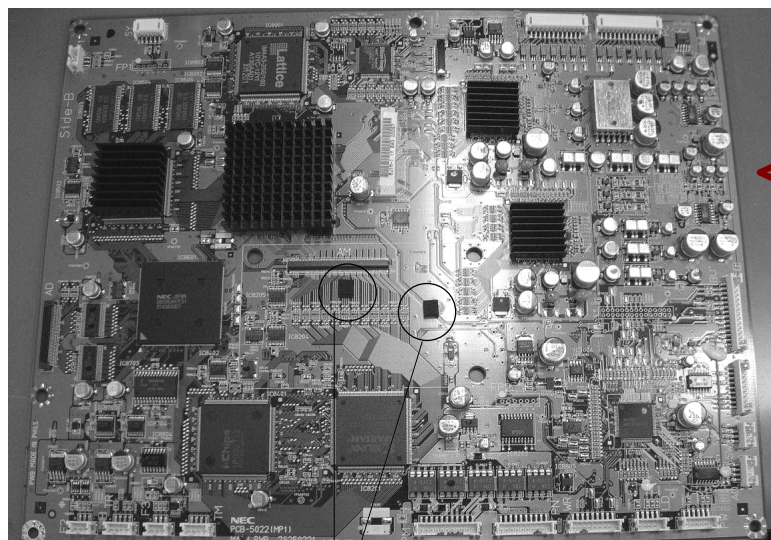
(11) 6SCREW (UNC4-40/4-40) (SRW106)
*2

(10) CBIPS*3*8*3KF (SRW18)
*9

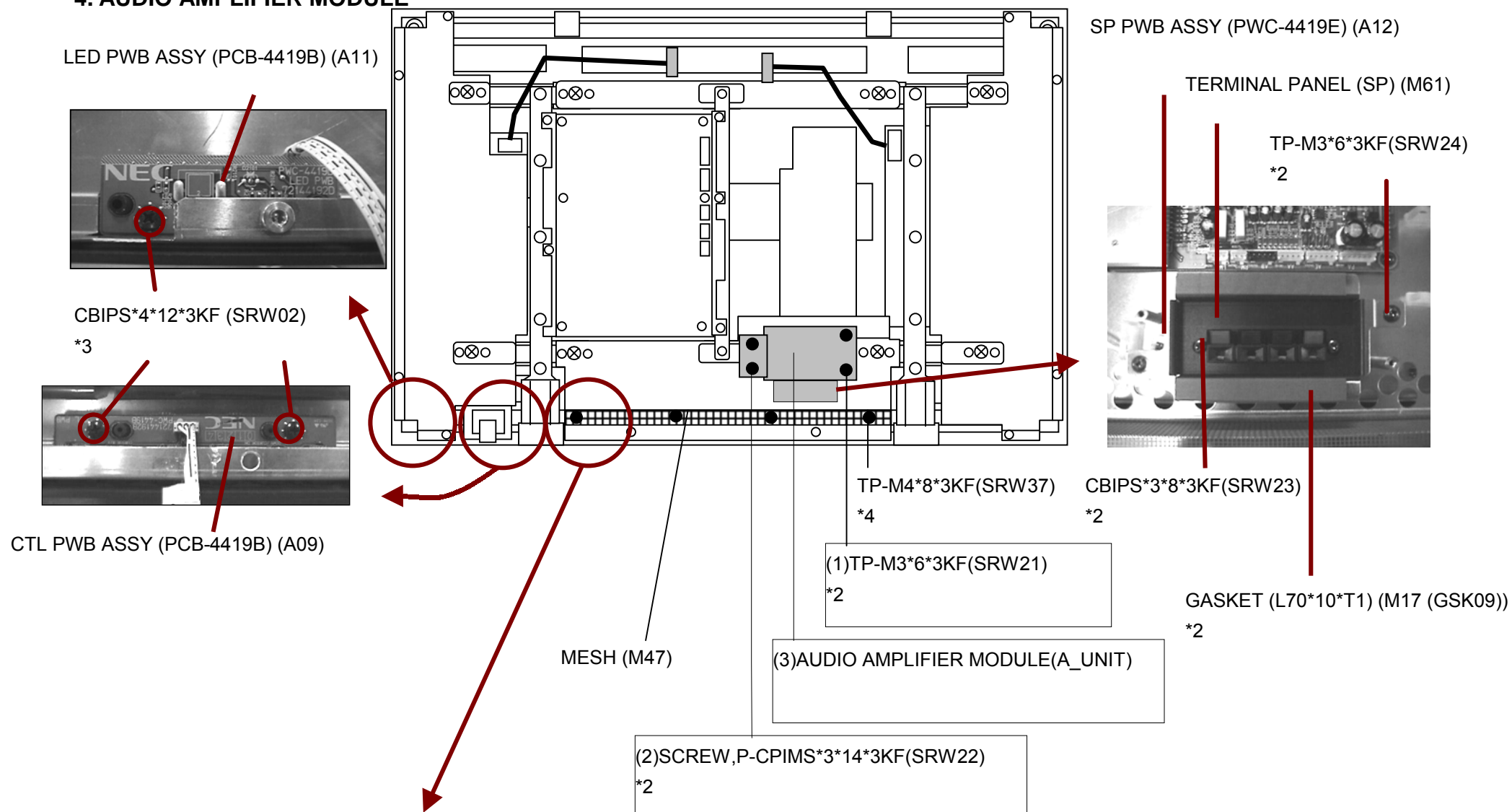
[B]

[A]

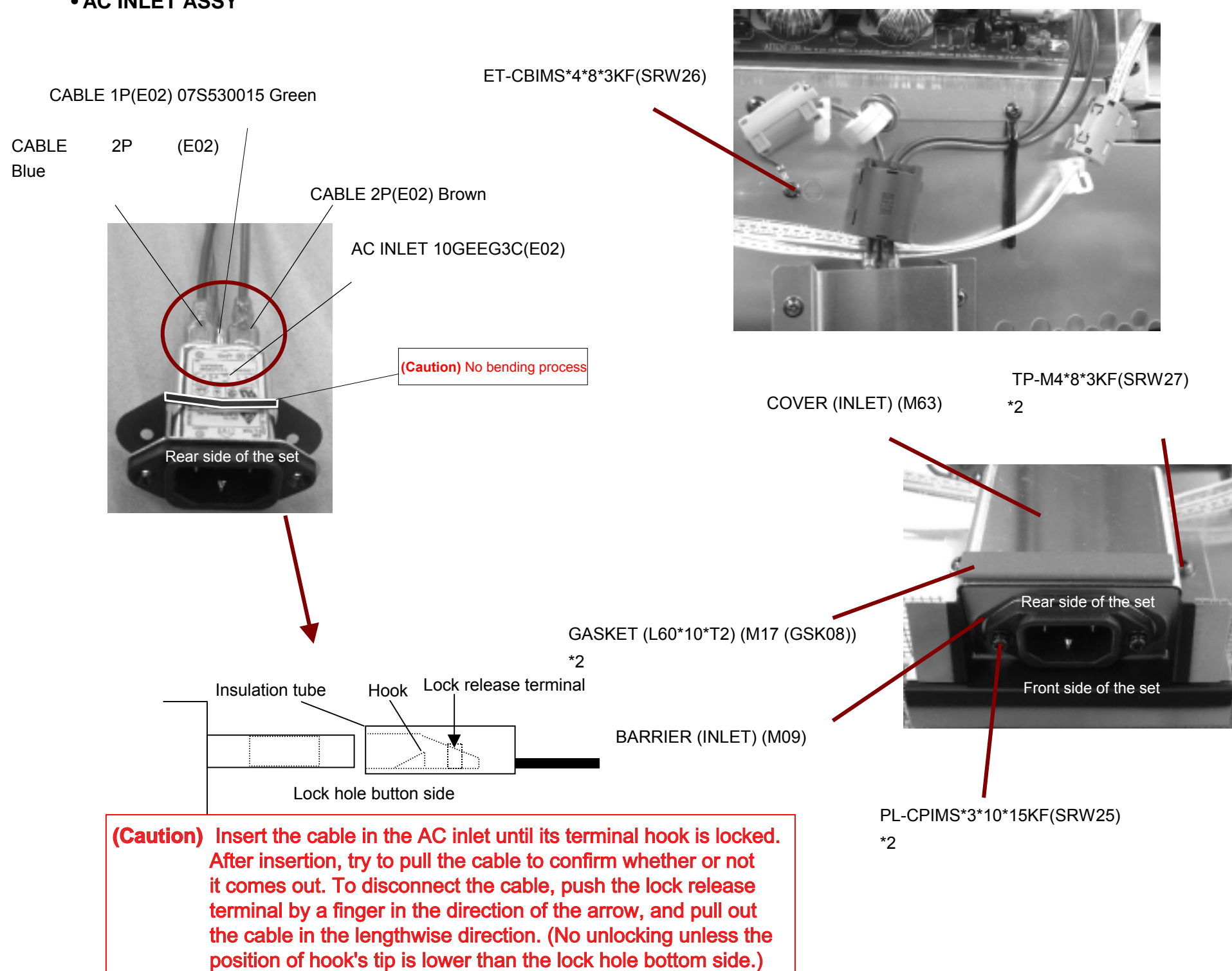
CUSHION RUBBER(M70)
*2



4. AUDIO AMPLIFIER MODULE

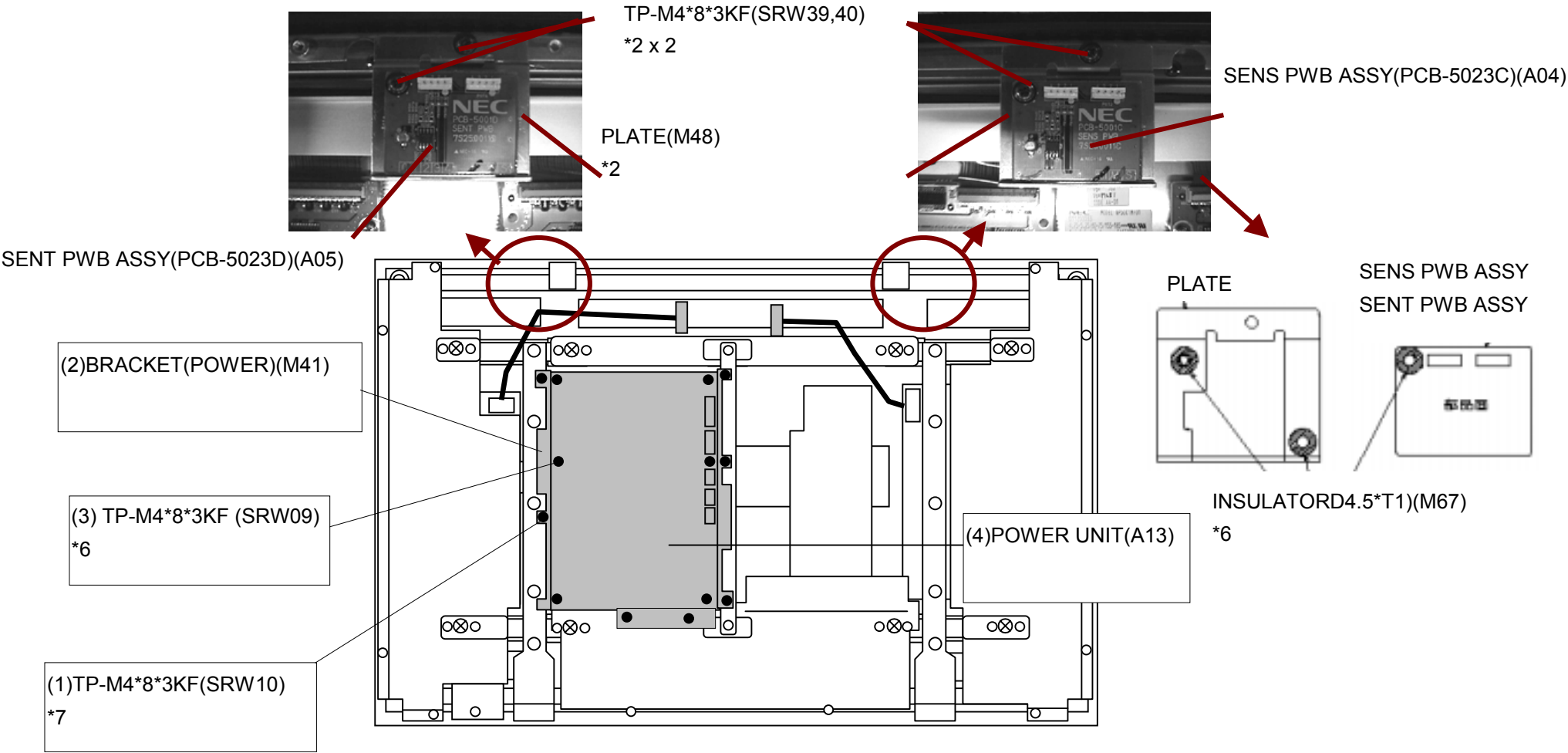


• AC INLET ASSY

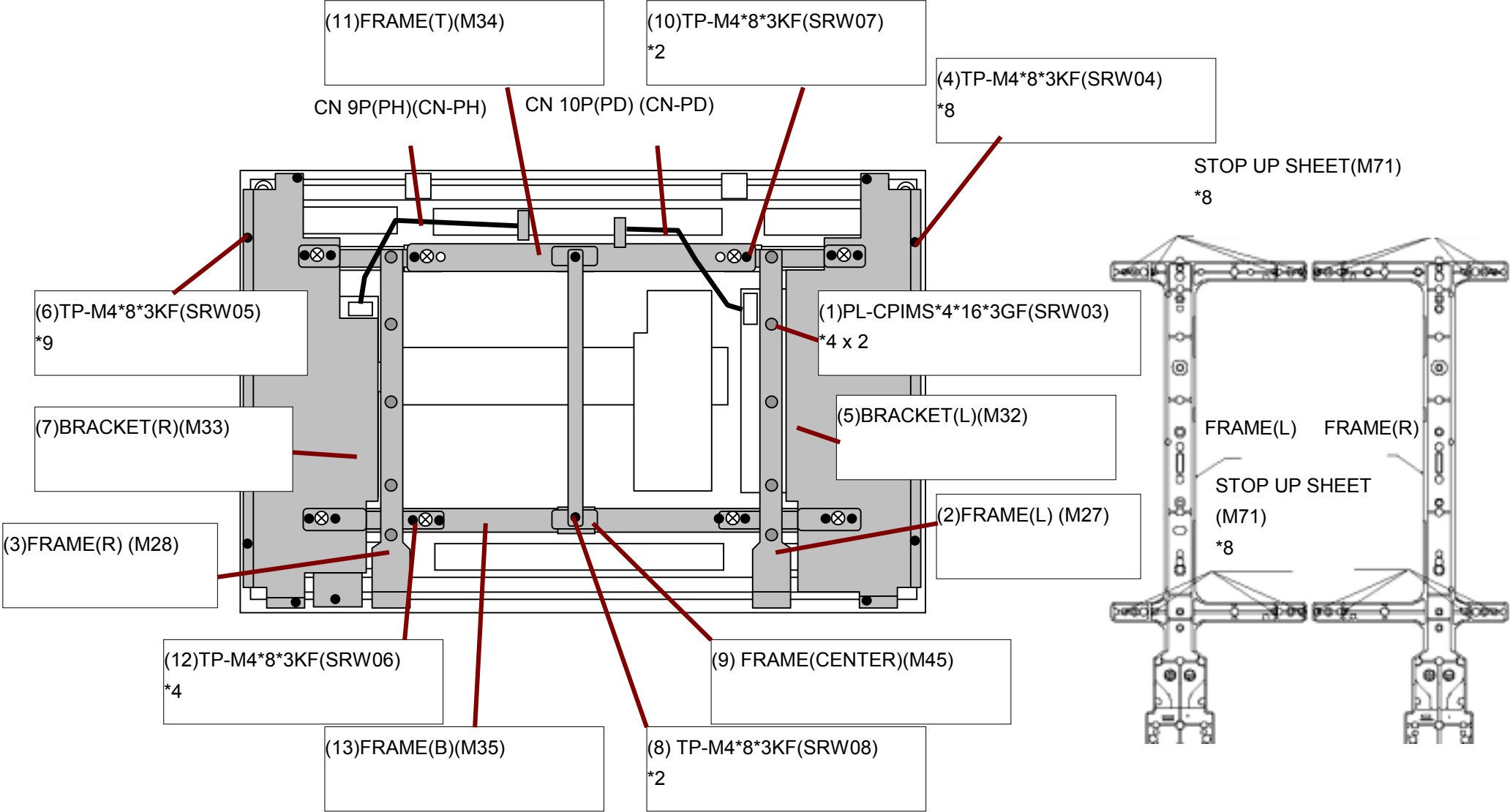


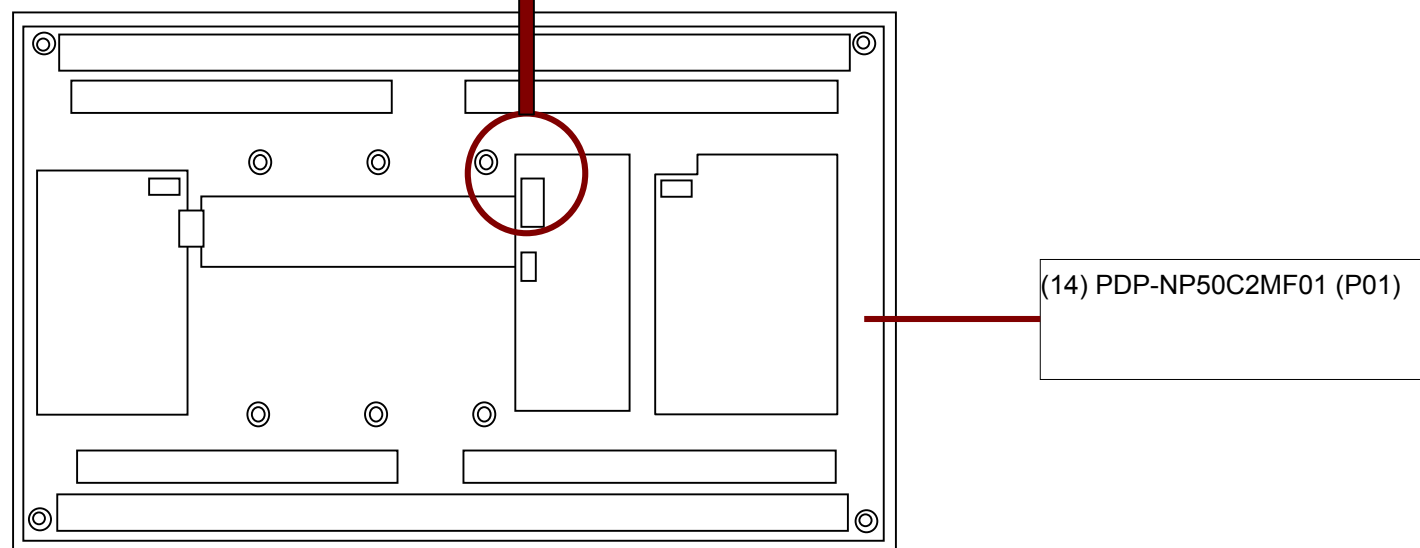
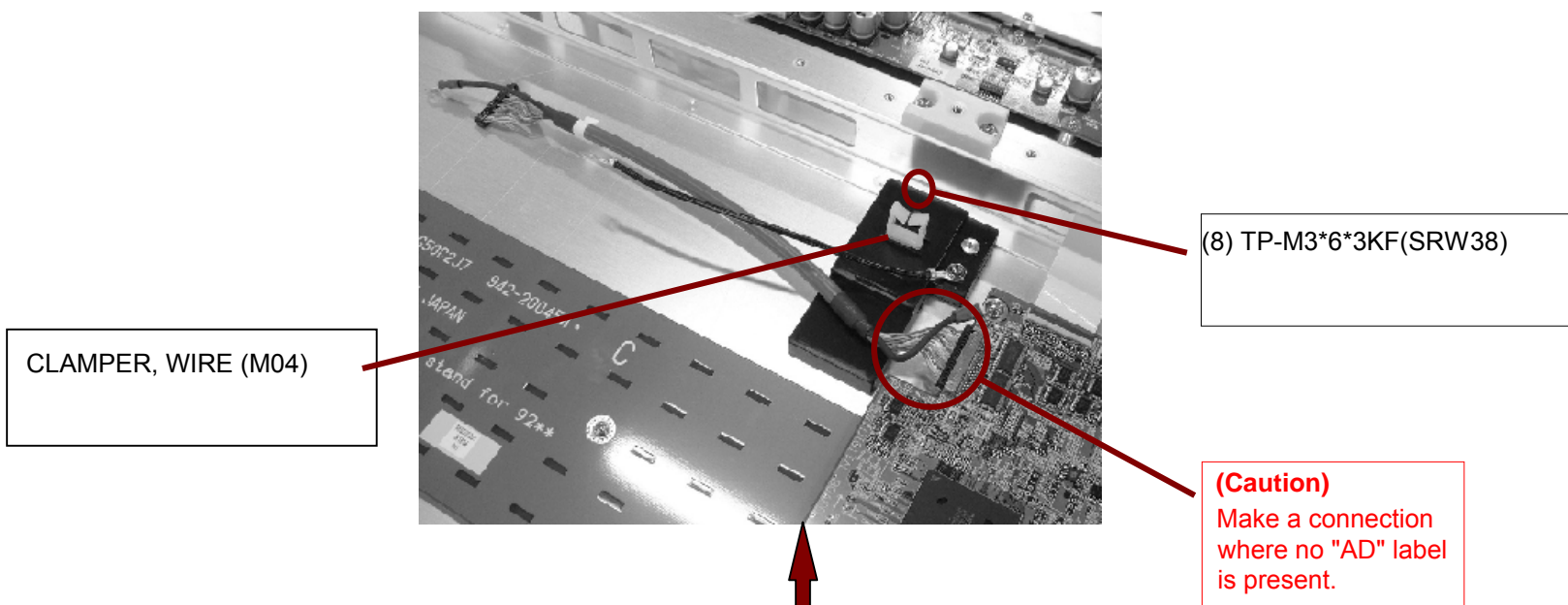
Side view

5. POWER UNIT

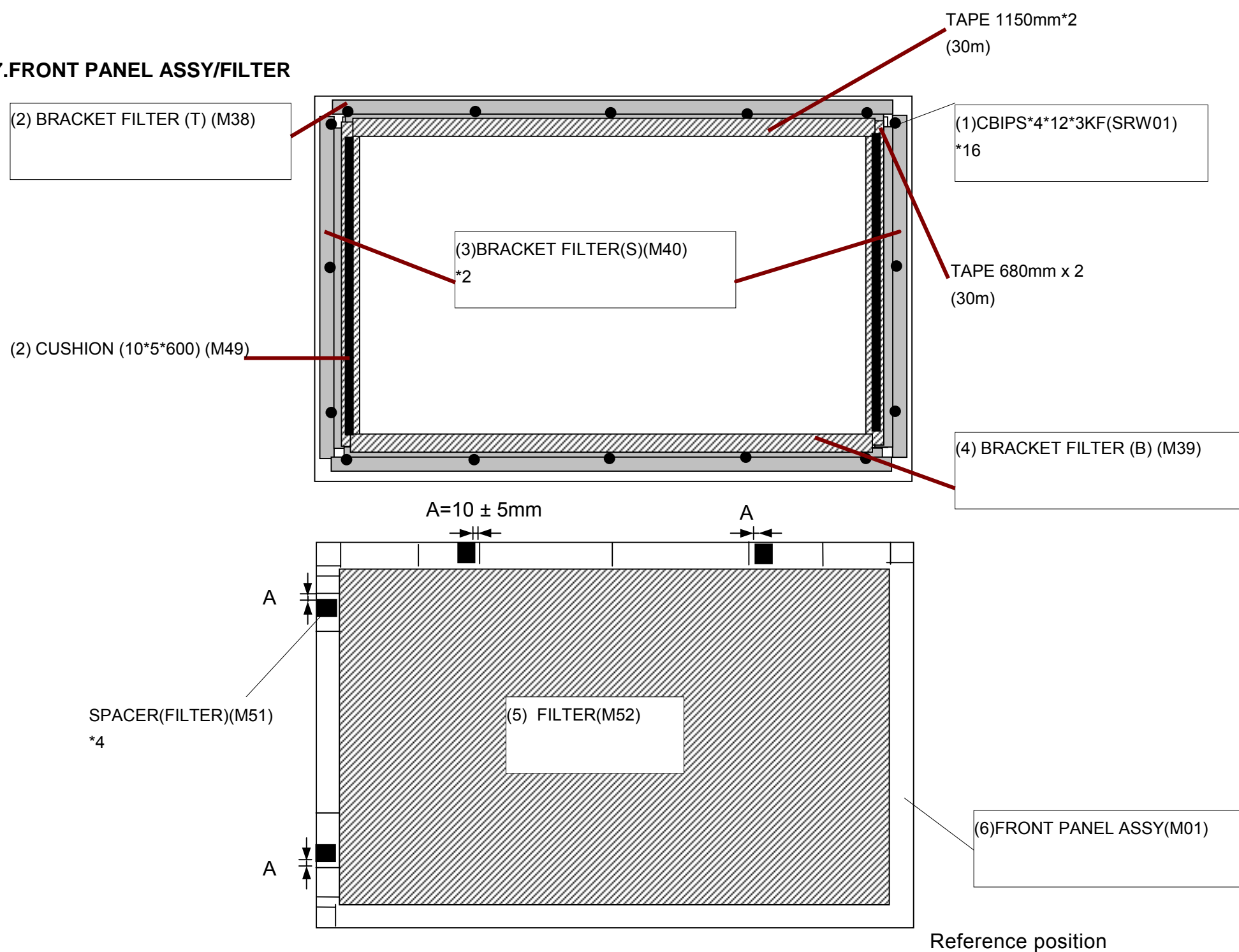


6.PDP MODULE

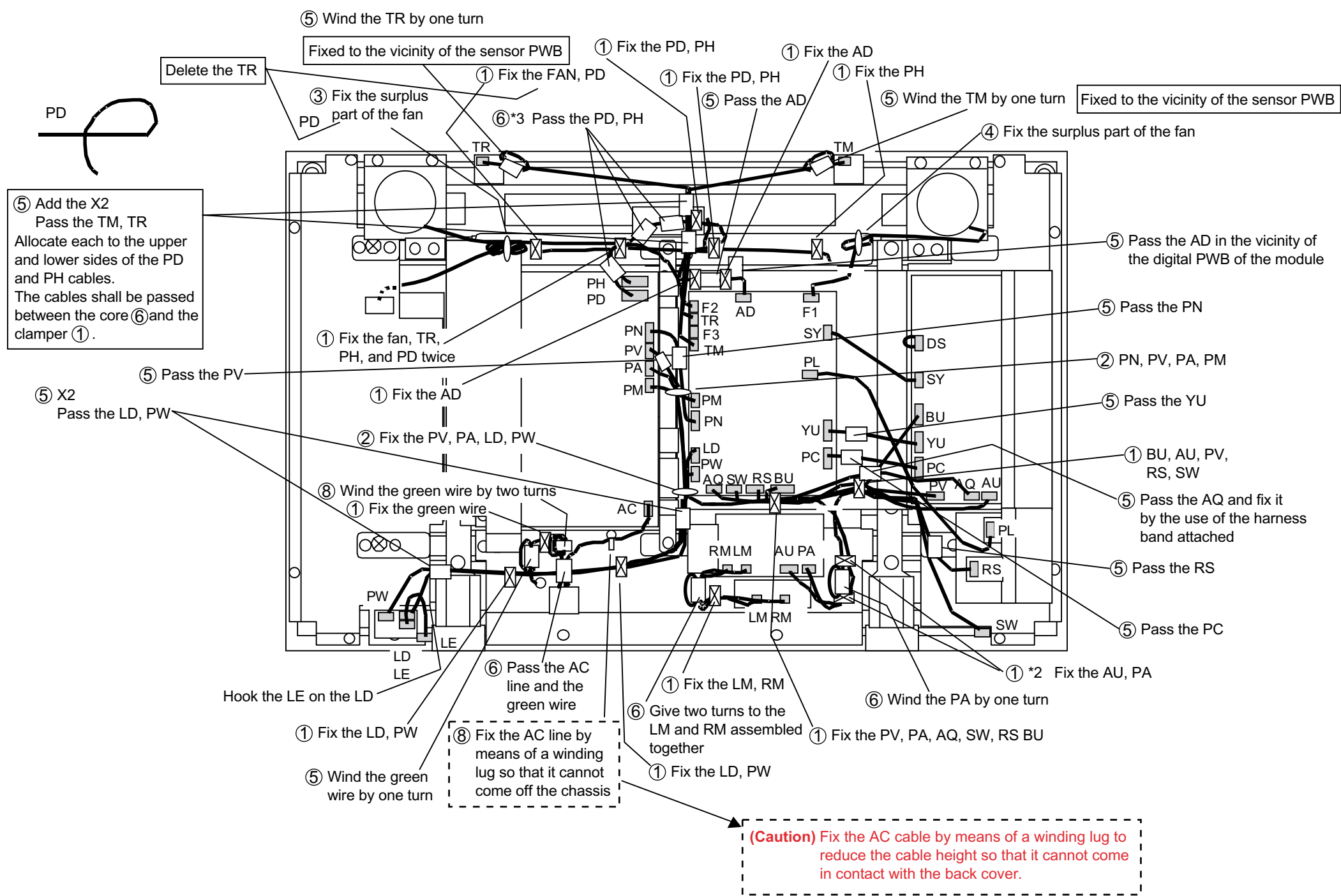




7.FRONT PANEL ASSY/FILTER



WIRING DIAGEAM

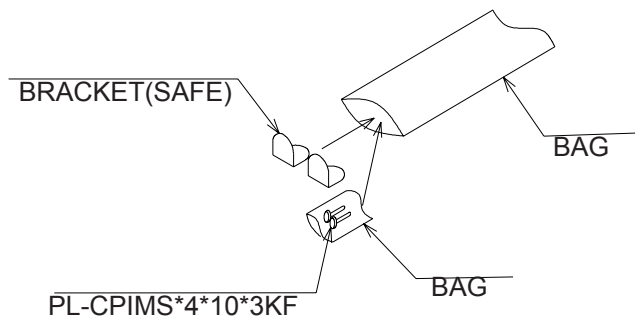


SYMBOL	PARTS NAME	PART No.	Q'ty
— CN-AD	CABLE 41P L250		1
— CN-AQ	CN 4P(AQ) 400W,2791-28		1
— CN-AU	CN 7P(AU) 500W,2791-28		1
— CN-BU	CN 14P(BU) 325W,2468-26		1
— CN-DS	CN 3P(DS) 50S, 1007-26		1
— CN-LD	CN 5P(LD) 625W,2468-26		1
— CN-LE	CN 5P(LE) 125,2468-26		1
— CN-LM	CN 3P(LM) 400,2468-26		1
— CN-PA	CN 6P(PA) 700,2468-26		1
— CN-PC	CN 13P(PC) 125W,MIX		1
— CN-PD	CN 10P(PD) 900W, 1007-20		1
— CN-PH	CN 9P(PH) 500W, 1007-20		1
— CN-PL	CABLE, TWINAX 21P L450		1
— CN-PM	CN 11P(PM) 100W,2468-26		1
— CN-PN	CN 10P(PN) 150W,2468-26		1
— CN-PV	CN 8P(PV) 600W,2468-26		1
— CN-PW	CN 6P(PW) 650W,2468-26		1
— CN-RM	CN 2P(RM) 375,2468-26		1
— CN-RS	CN 9P(RS) 475W,2468-26		1
— CN-SW	CN 3P(SW) 625W,2468-26		1
— CN-SY	CN 5P(SY) 175W,1691-28		1
— CN-TM	CN 4P(TM) 525W,2468-26		1
— CN-TR	CN 4P(TR) 525W,2468-26		1
— CN-YU	CN 12P(YU) 125W,MIX		1

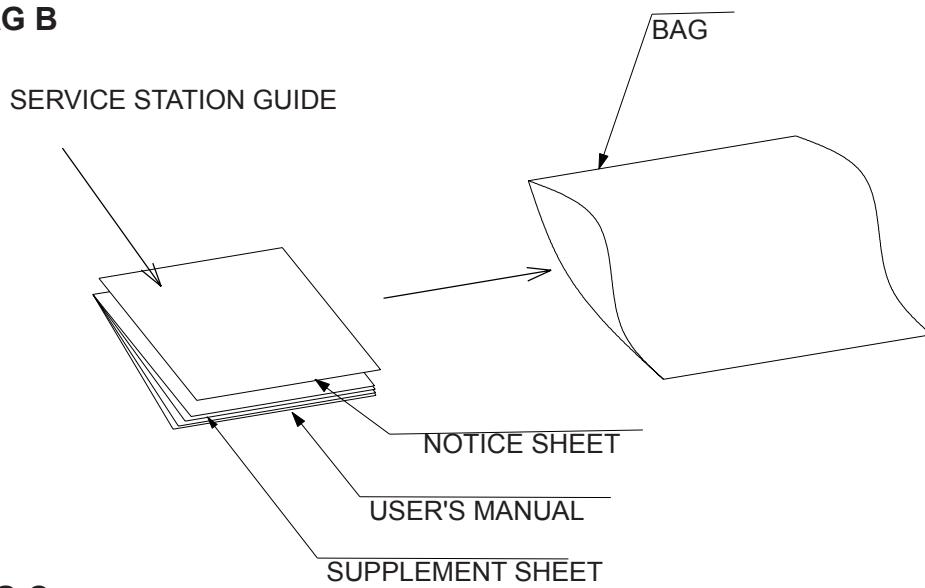
SYMBOL	PARTS NAME	PART No.	Q'ty
①	M02 CLAMPER,WIRE		15
②	M03 CLAMPER,WIRE (D11.5)		2
③	M05 CLAMPER,WIRE (D8.3)		1
④	M21 LEAD CLAMPER (D5.2)		1
⑤	FL31 FERRITE CORE ZCAT2032-930(FG)		1
⑤	FL12 FERRITE CORE ZCAT2032-930(AD)		2
⑤	FL35 FERRITE CORE ZCAT2032-930(TM)		1
⑤	FL36 FERRITE CORE ZCAT2032-930(TR)		1
⑤	FL5 FERRITE CORE ZCAT2032-930(PN)		1
⑤	FL6 FERRITE CORE ZCAT2032-930(RS)		1
⑤	FL8 FERRITE CORE ZCAT2032-930(PC)		1
⑤	FL37 FERRITE CORE ZCAT2032-930(LD/PW)		1
⑤	FL38 FERRITE CORE ZCAT2032-930(LD/PW)		1
⑤	FL51 FERRITE CORE ZCAT2032-930(PV)		1
⑤	FL52 FERRITE CORE ZCAT2032-930(AQ)		1
⑤	FL53 FERRITE CORE ZCAT2032-930(YU)		1
⑤	FL54 FERRITE CORE ZCAT2032-930(TR/TM')		2
⑥	FL30 FERRITE CORE SFT-72SB (AC FG)		1
⑥	FL11 FERRITE CORE SFT-72SB (PA)		1
⑥	FL33 FERRITE CORE SFT-72SB (LM,RM)		1
⑥	FL7 FERRITE CORE SFT-72SB (PD/PH)		3
⑦	FL32 FERRITE CORE (ESD-R-19) (FG)		1
⑧	M72 LUG (L72)		1

PACKAGING

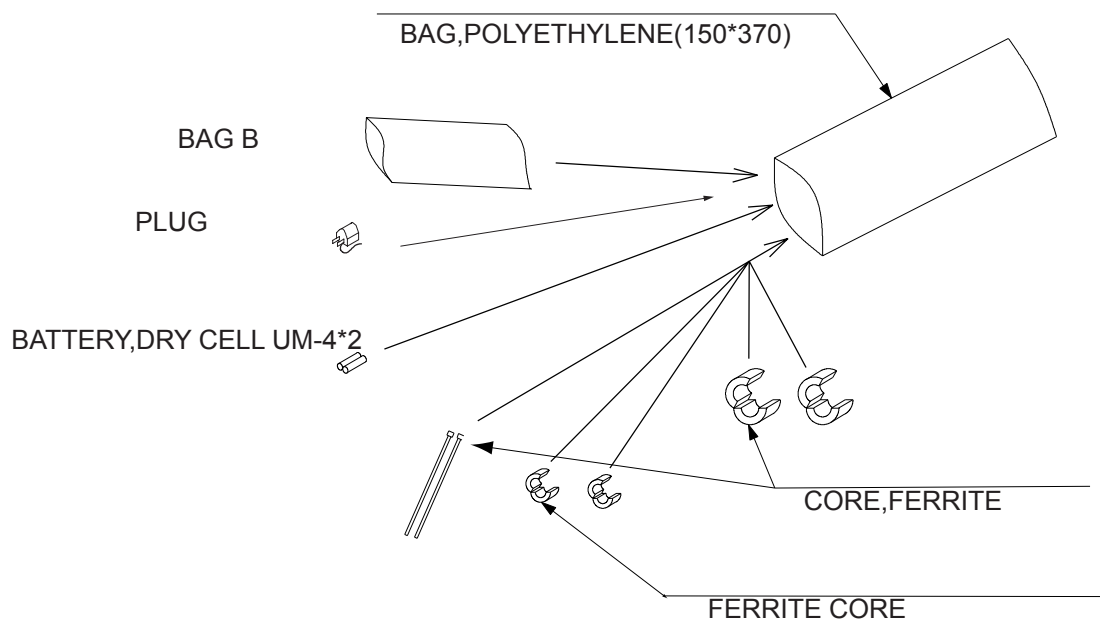
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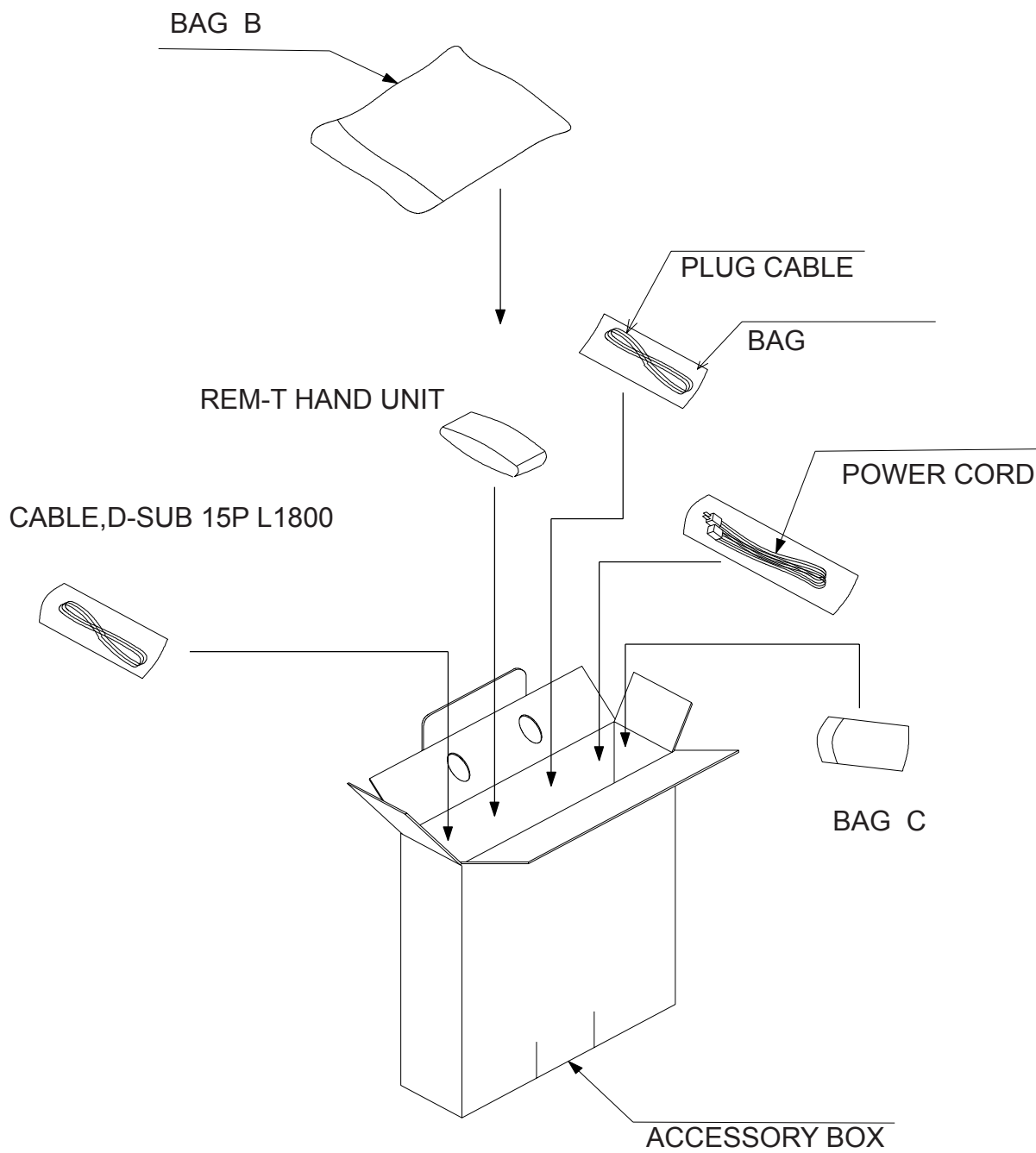
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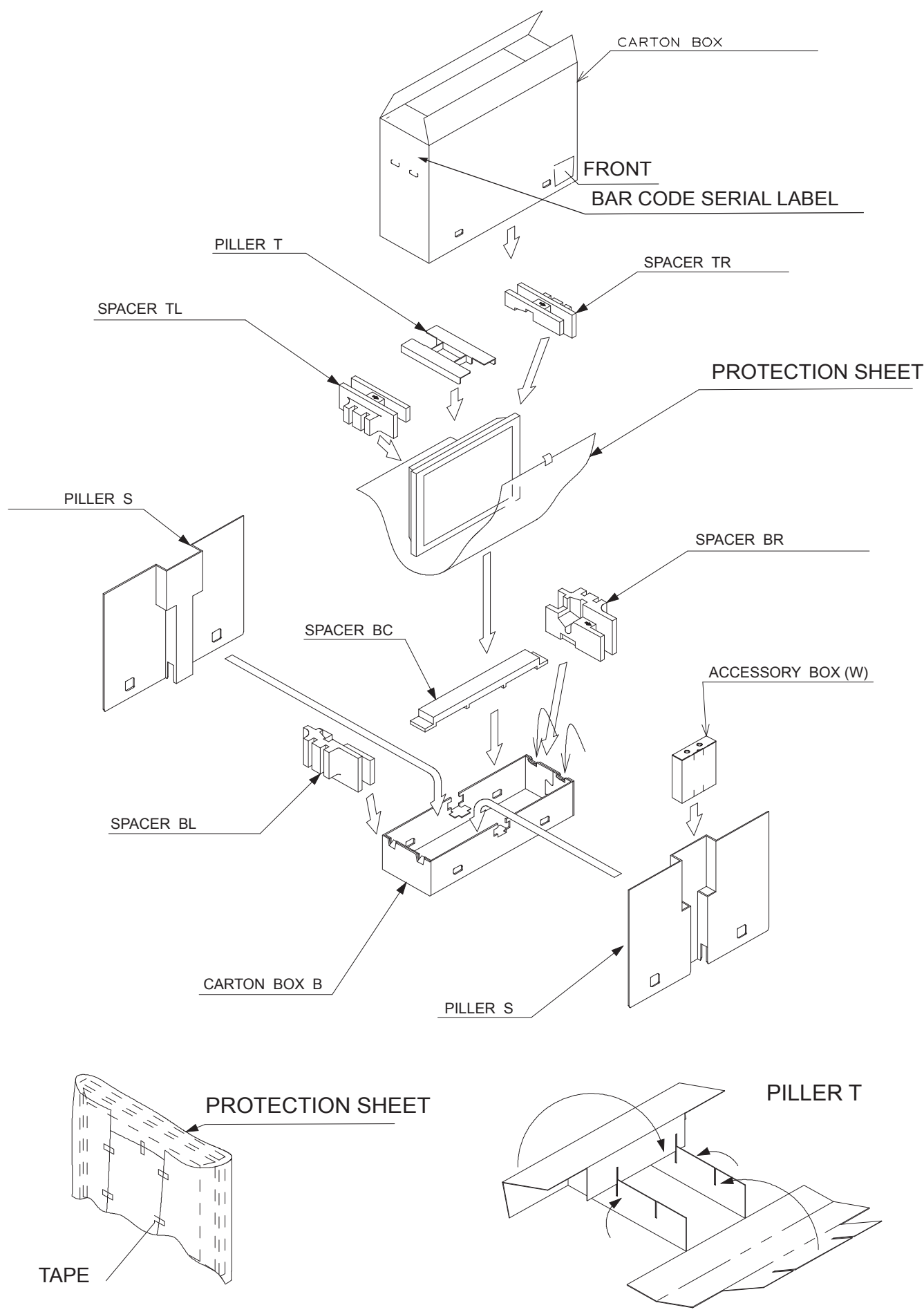
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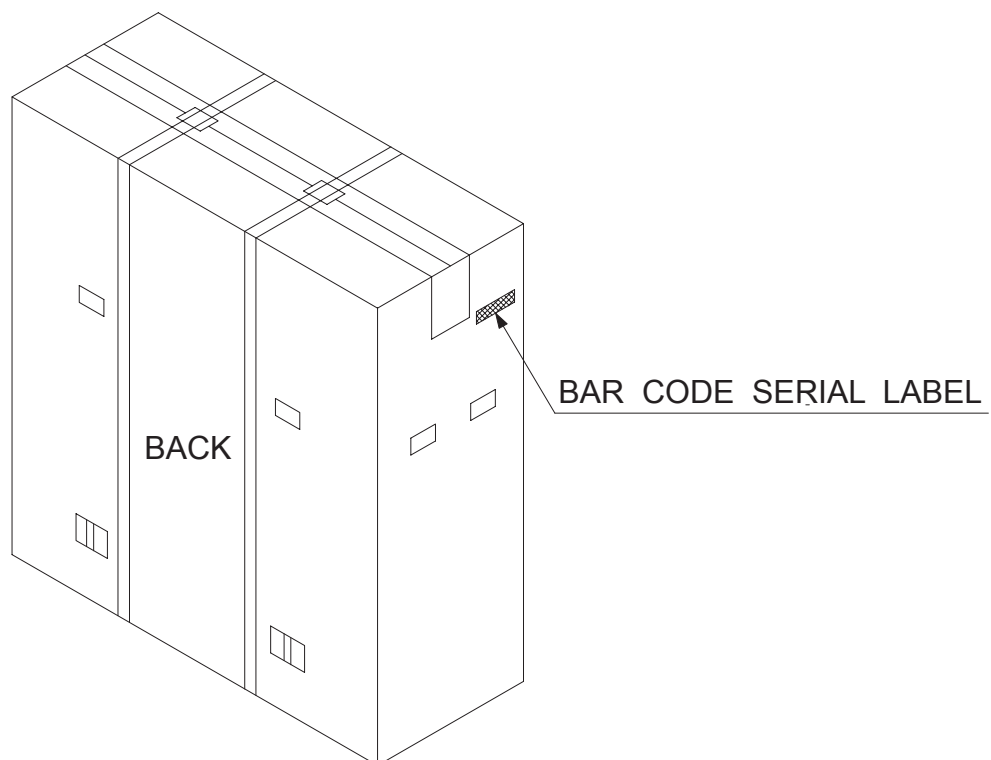
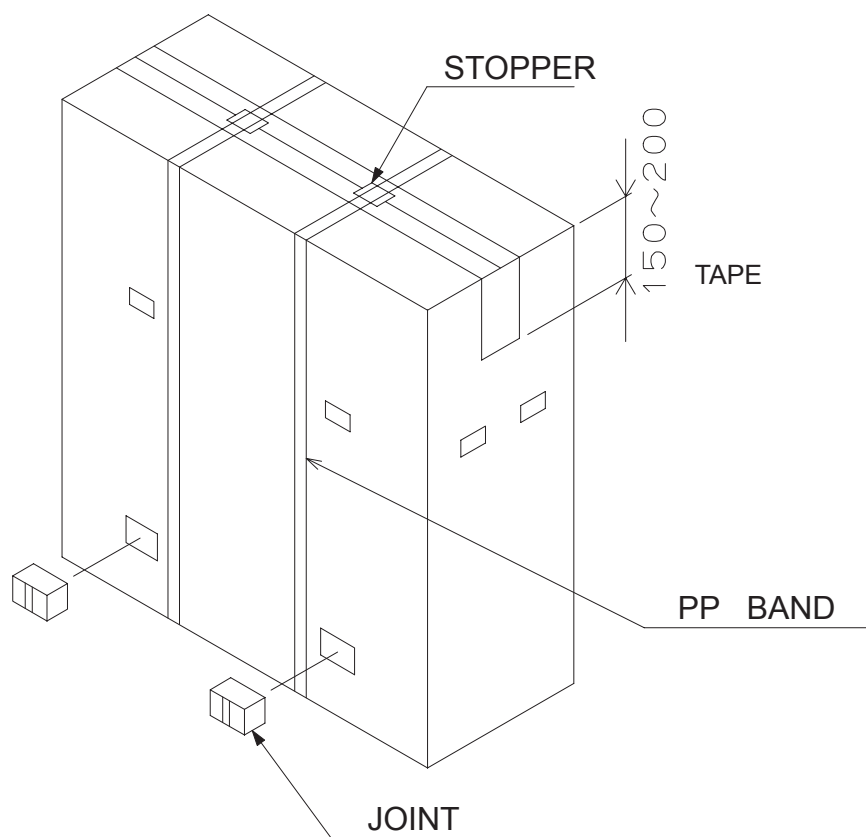


4. ACCESSORY BOX



5.CARTON BOX





PARTS LIST

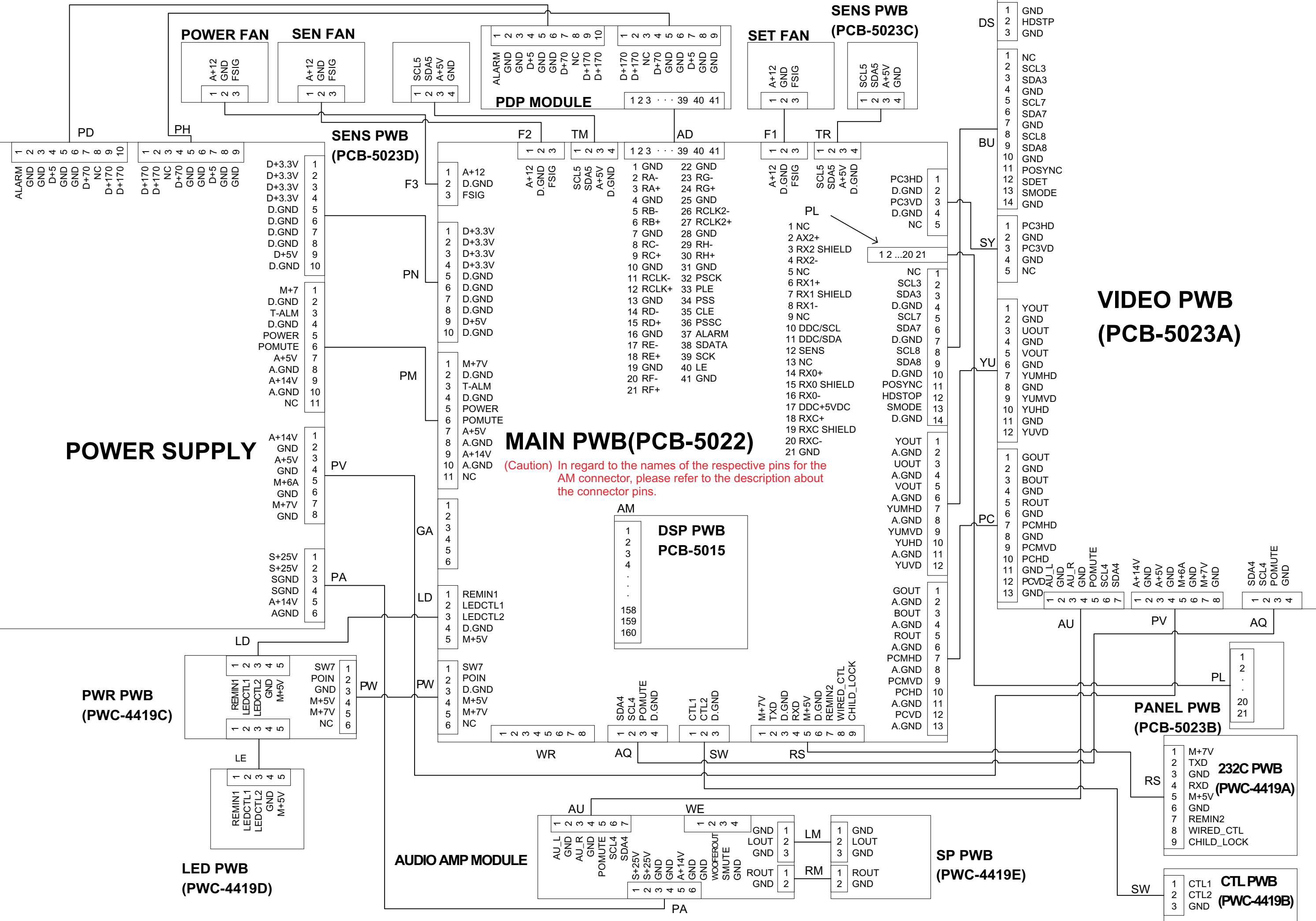
Notes:

1. Parts orders must contain model name, parts number and parts name.
2. When you place an order for spare parts, please refer to the respective service manual and mention the right parts number on your P.O. sheets
3. The letters NSP in the table indicate non-service parts.
4. Please refer to METHOD OF DISASSEMBLY or PACKAGING of service manual about a parts layout.

PD-5010 Parts List	
Part Number	Description
03S130222	AUDIO AMPLIFIER MODULE
07S530015	CABLE-1P L360
07S530021	CABLE-2P L240
07S530008	CABLE-41P L250
07S580006	CABLE-D-SUB 15P L1800
07S580010	CABLE-STEREO MINI L3M
07S530002	CABLE-TWINAX 21P L450
07S552004	CORD-POWER AC
029P00812	COVER-BACK ASSY
03S170001	FAN-MOTOR (109P1212L4D03)
029H00024	FRAME (L)
029H00034	FRAME (R)
029K00351	FILTER-SCREEN SHIELD (M52)
I/B PD5010	INSTRUCTION BOOK
029DS0411	PANEL-FRONT ASSY (M01)
029PS0821	PANEL-TERMINAL (232) ASSY
029PS0621	PANEL-TERMINAL (VI) ASSY
09S900017	PDP-NP50C2MF01
0936P7D01	PWB-DSP ASSY (PCB-5015)
0936P7M01	PWB-MAIN (PCB-5022)
03S110061	PWB-POWER UNIT (A13)
0936P7S91	PWB-SUB ADJ (PWC-4419A)
0936P7V01	PWB-VIDEO (PCB-5023A)
03S120141	REMOTE

CONNECTION DIAGRAMS

PD-5010 BLOCK DIAGRAM



Connector pin descriptions

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
MAIN-VIDEO	DS	1	GND	GND	Turned LO when the DS connector is available, and video output is generated. Turned HI when no DS connector is available, and video output is muted.	
		2	HDSTP	Video mute control of chroma signal		
		3	GND	GND		
MAIN-VIDEO	BU	1	NC		Control signal of IC5001, 5305, and 5306 Control signal of IC5001, 5305, and 5306	MAIN → VIDEO MAIN → VIDEO
		2	SCL3	CLK of the I2C bus		
		3	SDA3	DATA of the I2C bus		
		4	GND	GND	Control signal of IC5501 and 5505 Control signal of IC5501 and 5505	MAIN → VIDEO MAIN → VIDEO
		5	SCL7	CLK of the I2C bus		
		6	SDA7	DATA of the I2C bus		
		7	GND	GND	For extension I/O For extension I/O	MAIN → VIDEO VIDEO → MAIN
		8	SCL8	CLK of the I2C bus		
		9	SDA8	DATA of the I2C bus		
		10	GND		Power ON with HI Presence of S terminal identified with HI Usually LO. S1: 5V, S2:2.5V	VIDEO → MAIN VIDEO → MAIN VIDEO → MAIN
		11	POSYNC	Power control for power management		
		12	SDET	Insertion detect signal for the S terminal		
		13	MODE	Mode control signal of S1/S2 terminal		
		14	GND	GND		
MAIN-VIDEO	SY	1	PC3HD	Horizontal sync signal for PC signal (digital input)	Horizontal sync signal for PC signal of digital input	MAIN → VIDEO
		2	GND	GND	Vertical sync signal for PC signal of digital input	MAIN → VIDEO
		3	PC3VD	Vertical sync signal for PC signal (digital input)		
		4	GND	GND		
		5	NC	No-connection terminal		
MAIN-VIDEO	YU	1	YOUT	Chroma Y signal or VIDEO G signal	For the chroma signal, input signal is immediately output. For the video signal, each decoded original color signal is output.	VIDEO → MAIN
		2	GND	GND	For the chroma signal, input signal is immediately output. For the video signal, each decoded original color signal is output.	VIDEO → MAIN
		3	UOUT	Chroma B-Y signal or VIDEO B signal		
		4	GND	GND	For the chroma signal, input signal is immediately output. For the video signal, each decoded original color signal is output.	VIDEO → MAIN
		5	VOUT	Chroma R-Y signal or VIDEO R signal		
		6	GND	GND	Horizontal sync signal input to be entered in microcomputer when a chroma or video signal is used.	VIDEO → MAIN
		7	YUMHD	Horizontal sync signal for microcomputer		

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		8 9	GND YUMVD	GND Vertical sync signal for microcomputer	Vertical sync signal input to be entered in microcomputer when a chroma or video signal is used.	VIDEO → MAIN
		10	YUHD	Horizontal sync signal for A/D	Horizontal sync signal input to be entered in A/D converter when a chroma or video signal is used.	VIDEO → MAIN
		11 12	GND YUVD	GND Vertical sync signal for A/D	Vertical sync signal input to be entered in A/D converter when a chroma or video signal is used.	VIDEO → MAIN
MAIN-VIDEO	PC	1 2 3 4 5 6 7 8 9 10 11 12 13	GOUT GND BOUT GND ROUT GND PCMHD GND PCMVD PCHD GND PCVD GND	Signal G of PC GND Signal B of PC GND Signal R of PC GND Horizontal sync signal for microcomputer GND Vertical sync signal for microcomputer Horizontal sync signal for A/D GND Vertical sync signal for the A/D GND	For the PC signal, an input signal is immediately output. For the PC signal, an input signal is immediately output. For the PC signal, an input signal is immediately output. Horizontal sync signal input to be entered in microcomputer of the PC signal. Vertical sync signal input to be entered in microcomputer of the PC signal. Horizontal sync signal input to be entered in the A/D of the PC signal. Vertical sync signal input to be entered in the A/D of the PC signal	VIDEO → MAIN VIDEO → MAIN VIDEO → MAIN VIDEO → MAIN VIDEO → MAIN VIDEO → MAIN VIDEO → MAIN
VIDEO- POWER	PV	1 2 3 4 5 6 7 8	A+14V GND A+5V GND A+6V GND M+7V GND	14V power supply for analog circuit GND 5V power supply for analog circuit GND 6V power supply for analog circuit GND 7V power supply for microcomputer	For analog signal processing For analog signal processing For analog signal processing Sync detector circuit for restoration from power management	POWER → VIDEO POWER → VIDEO POWER → VIDEO POWER → VIDEO
MAIN-VIDEO	AQ	1 2 3 4	SDA4 SCL4 POMUTE GND	DATA of the I2C bus CLK of the I2C bus Mute signal for Power start GND	Audio control signal Audio control signal Usually 4.8V	MAIN → VIDEO MAIN → VIDEO MAIN → VIDEO

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
VIDEO-AUDIO	AU	1	AU_L	Signal L	L CH for audio signal	VIDEO → AUDIO
		2	GND	GND		
		3	AU_R	Signal R	R CH for audio signal	VIDEO → AUDIO
		4	GND	GND		
		5	POMUTE	Mute signal for Power start	Usually 4.8V	VIDEO → AUDIO
		6	SCL4	CLK of the I2C bus	Audio control signal	VIDEO → AUDIO
		7	SDA4	DATA of the I2C bus	Audio control signal	VIDEO → AUDIO
RS232C-MAIN	RS	1	M+7V	7V power supply; the same as for microcomputer		MAIN → RS232C
		2	TXD	RS-232 driver output		MAIN → RS232C
		3	GND	GND		
		4	RXD	RS-232 receiver input		MAIN → RS232C
		5	M+5V	5V power supply; the same as for microcomputer		MAIN → RS232C
		6	GND	GND		
		7	REMIN2	Data signal for the wired remote control		RS232C → MAIN
		8	WIRED_CTL	Insertion control of the wired remote control	Usually 5V. 0V when inserted.	RS232C → MAIN
		9	CHILD_LOCK	Child lock control	0V for SW OFF. 5V for SW ON.	RS232C → MAIN
MAIN-SENT MAIN-SENS	TM TR	1	SCL5	CLK of the I2C bus	For temperature sensor	MAIN → SENS
		2	SDA5	DATA of the I2C bus	For temperature sensor	MAIN → SENS
		3	A+5V	5V power supply for ANALOG		MAIN → SENS
		4	GND	GND		
MAIN-PDP MODULE	AD	1	GND	GND		MAIN → PDPMODULE
		2	RA-	VIDEO input A-		MAIN → PDPMODULE
		3	RA+	VIDEO input A+		MAIN → PDPMODULE
		4	GND	GND		
		5	RB-	VIDEO input B-		MAIN → PDPMODULE
		6	RB+	VIDEO input B+		MAIN → PDPMODULE
		7	GND	GND		
		8	RC-	VIDEO input C-		MAIN → PDPMODULE
		9	RC+	VIDEO input C+		MAIN → PDPMODULE
		10	GND	GND		
		11	RCLK-	CKL- for VIDEO		MAIN → PDPMODULE
		12	RCLK+	CKL+ for VIDEO		MAIN → PDPMODULE
		13	GND	GND		
		14	RD-	VIDEO input D-		MAIN → PDPMODULE
		15	RD+	VIDEO input D+		MAIN → PDPMODULE
		16	GND	GND		
		17	RE-	VIDEO input E-		MAIN → PDPMODULE
		18	RE+	VIDEO input E+		MAIN → PDPMODULE
		19	GND	GND		

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41	RF- RF+ GND RG- RG+ GND RCLK2- RCLK2+ GND RH- RH+ GND PSCK PLE PSS CLE PSSC ALARM SDATA SCK LE GND	VIDEO input F- VIDEO input F+ GND VIDEO input G- VIDEO input G+ GND CKL2- for VIDEO CKL2+ for VIDEO GND VIDEO input H- VIDEO input H+ GND CLK for power save data I/O PSS read enable Average signal level data output for power save PSS latch enable Control data input for power save Panel break alarm signal Serial data for various data setting Serial CLK Serial data latch enable GND		MAIN → PDPMODULE MAIN → PDPMODULE MAIN → PDPMODULE MAIN → PDPMODULE MAIN → PDPMODULE MAIN → PDPMODULE MAIN → PDPMODULE MAIN → PDPMODULE PDPMODULE → MAIN MAIN → PDPMODULE MAIN → PDPMODULE PDPMODULE → MAIN MAIN → PDPMODULE MAIN → PDPMODULE MAIN → PDPMODULE
MAIN-SENT FAN	F1 F2 F3	1 2 3	A+12V GND FSIG	12V power supply for ANALOG signal GND FAN alarm signal		MAIN → FAN FAN → MAIN
MAIN-POWER SUPPLY	PM	1 2 3 4 5 6 7 8 9 10 11	M+7V D.GND T-ALM D.GND POWER POMUTE A+5V A.GND A+14V A.GND NC	7V power supply for microcomputer GND Alarm signal Power supply control Mute signal for power supply starting 5V power supply for ANALOG signal GND 14V power supply for ANALOG signal GND	Usually H Usually H Usually H	POWER → MAIN POWER → MAIN POWER → MAIN POWER → MAIN POWER → MAIN POWER → MAIN POWER → MAIN
MAIN-POWER SUPPLY	PN	1 2 3 4 5	D+3.3V D+3.3V D+3.3V D+3.3V D.GND	3.3V for DIGITAL 3.3V for DIGITAL 3.3V for DIGITAL 3.3V for DIGITAL GND		POWER → MAIN POWER → MAIN POWER → MAIN POWER → MAIN

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		6 7 8 9 10	D.GND D.GND D.GND D+5V D.GND	GND GND GND 5V for DIGITAL GND		POWER → MAIN
MAIN-LED	LD LE	1 2 3 4 5	REMIN1 LEDCTL1 LEDCTL2 GND M+5V	Infrared ray remote control data Standby LED control Standby LED control GND 5V power supply for microcomputer		LED → MAIN MAIN → LED MAIN → LED MAIN → LED
MAIN-PWR	PW	1 2 3 4 5 6	SW7 POIN GND M+5V M+7V NC	Power supply starting control Power supply starting detection GND 5V power supply for microcomputer 7V power supply for microcomputer No-connection terminal	Usually 6.8V Usually 5V	MAIN → PW PW → MAIN MAIN → PW MAIN → PW
MAIN-SW	SW	1 2 3	CTL1 CTL2 GND	Key input detection Key input detection GND		SW → MAIN SW → MAIN
AUDIO-POWER SUPPLY	PA	1 2 3 4 5 6	S+25V S+25V GND GND A+14V GND	+25V power supply for audio circuit +26V power supply for audio circuit GND GND 14V power ANALOG circuit GND		POWER → AUDIO POWER → AUDIO POWER → AUDIO
POWER SUPPLY- PDP MODULE	PD	1 2 3 4 5 6 7 8 9 10	ALARM GND GND D+5V GND GND D+70 NC D+170 D+170	Module alarm signal GND GND 5V power supply for DIGITAL circuit GND GND 70V power supply for DIGITAL circuit No-connection terminal 170V power supply for DIGITAL circuit 170V power supply for DIGITAL circuit		MODULE → POWER POWER → MODULE POWER → MODULE POWER → MODULE POWER → MODULE
POWER SUPPLY- PDP MODULE	PH	1	D+170	170V power supply for DIGITAL circuit		POWER → MODULE

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		2	D+170	170V power supply for DIGITAL circuit		POWER → MODULE
		3	NC	No-connection terminal		
		4	D+70	70V power supply for DIGITAL circuit		POWER → MODULE
		5	GND	GND		
		6	GND	GND		
		7	D+5	5V power supply for DIGITAL circuit		POWER → MODULE
		8	GND	GND		
		9	GND	GND		
MIAN-PL (Note : MAIN PWB No. is applied to the PIN No.)	PL	1	NC	No-connection terminal		PL → MAIN
		2	RX2+	Serial signal R (+ side)		
		3	GND	GND		PL → MAIN
		4	RX2-	Serial signal R (- side)		
		5	NC	No-connection terminal		PL → MAIN
		6	RX1+	Serial signal G (+ side)		
		7	GND	GND		PL → MAIN
		8	RX1-	Serial signal G (- side)		
		9	NC	No-connection terminal		PL → MAIN
		10	DDC/SCL	CLK of the I2C bus for DDC writing		PL → MAIN
		11	DDC/SDA	DATA of the I2C bus for DDC writing		PL → MAIN
		12	SENS	Power supply detection		MAIN → PL
		13	NC	No-connection terminal		
		14	RX0+	Serial signal B (+ side)		PL → MAIN
		15	GND	GND		
		16	RX0-	Serial signal B (- side)		PL → MAIN
		17	DDC5V	5V power supply for DDC		MAIN → PL
		18	RXC+	CLK serial signal (+ side)		PL → MAIN
		19	GND	GND		
		20	RXC-	CLK serial signal (- side)		PL → MAIN
		21	GND	GND		
AUDIO-SPEAKER	LM	1	GND	GND		
		2	LOUT	Left-side speaker output		AUDIO → SPEAKER
		3	GND			
AUDIO-SPEAKER	RM	1	ROUT	Right-side speaker output		AUDIO → SPEAKER
		2	GND	GND		
MAIN-DSP	AM	1	NC			
		2	AMDP_CK2	Not used		
		3	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		4	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		5	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		6	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		7	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		8	GND2	GND		

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		9	GND2	GND		
		10	GND2	GND		
		11	GND2	GND		
		12	GND2	GND		
		13	ENAMDP	Not used		
		14	SCL1	Clock line for the I2C bus	For DSP	MAIN → DSP
		15	SDA1	Data line for the I2C bus	For DSP	MAIN → DSP
		16	SDA_AMDP	Data line for the I2C bus	For DSP	DSP → MAIN
		17	XRST	Reset signal for the DSP circuit	5V for normal operation	MAIN → DSP
		18	GND2	GND		
		19	SYSCLK	System lock signal for the DSP circuit	10MHz	MAIN → DSP
		20	GND2	GND		
		21	VIO_BODD7	Digital video signal (B)	MSB	DSP → MAIN
		22	VIO_BODD6	Digital video signal (B)		DSP → MAIN
		23	VIO_BODD5	Digital video signal (B)		DSP → MAIN
		24	VIO_BODD4	Digital video signal (B)		DSP → MAIN
		25	GND2	GND		
		26	VIO_BODD3	Digital video signal (B)		DSP → MAIN
		27	VIO_BODD2	Digital video signal (B)		DSP → MAIN
		28	VIO_BODD1	Digital video signal (B)		DSP → MAIN
		29	VIO_BODD0	Digital video signal (B)	LSB	DSP → MAIN
		30	GND2	GND		
		31	VPUT_BEV7	Digital video signal (B)	MSB	DSP → MAIN
		32	VPUT_BEV6	Digital video signal (B)		DSP → MAIN
		33	VPUT_BEV5	Digital video signal (B)		DSP → MAIN
		34	VPUT_BEV4	Digital video signal (B)		DSP → MAIN
		35	GND2	GND		
		36	VPUT_BEV3	Digital video signal (B)		DSP → MAIN
		37	VPUT_BEV2	Digital video signal (B)		DSP → MAIN
		38	VPUT_BEV1	Digital video signal (B)		DSP → MAIN
		39	VPUT_BEV0	Digital video signal (B)	LSB	DSP → MAIN
		40	GND2	GND		
		41	VIO_GODD7	Digital video signal (G)	MSB	DSP → MAIN
		42	VIO_GODD6	Digital video signal (G)		DSP → MAIN
		43	VIO_GODD5	Digital video signal (G)		DSP → MAIN
		44	VIO_GODD4	Digital video signal (G)		DSP → MAIN
		45	GND2	GND		
		46	VIO_GODD3	Digital video signal (G)		DSP → MAIN
		47	VIO_GODD2	Digital video signal (G)		DSP → MAIN
		48	VIO_GODD1	Digital video signal (G)		DSP → MAIN
		49	VIO_GODD0	Digital video signal (G)	LSB	DSP → MAIN
		50	GND2	GND		
		51	VOUT_GEV7	Digital video signal (G)	MSB	DSP → MAIN
		52	VOUT_GEV6	Digital video signal (G)		DSP → MAIN
		53	VOUT_GEV5	Digital video signal (G)		DSP → MAIN
		54	VOUT_GEV4	Digital video signal (G)		DSP → MAIN
		55	GND2	GND		
		56	VOUT_GEV3	Digital video signal (G)		DSP → MAIN

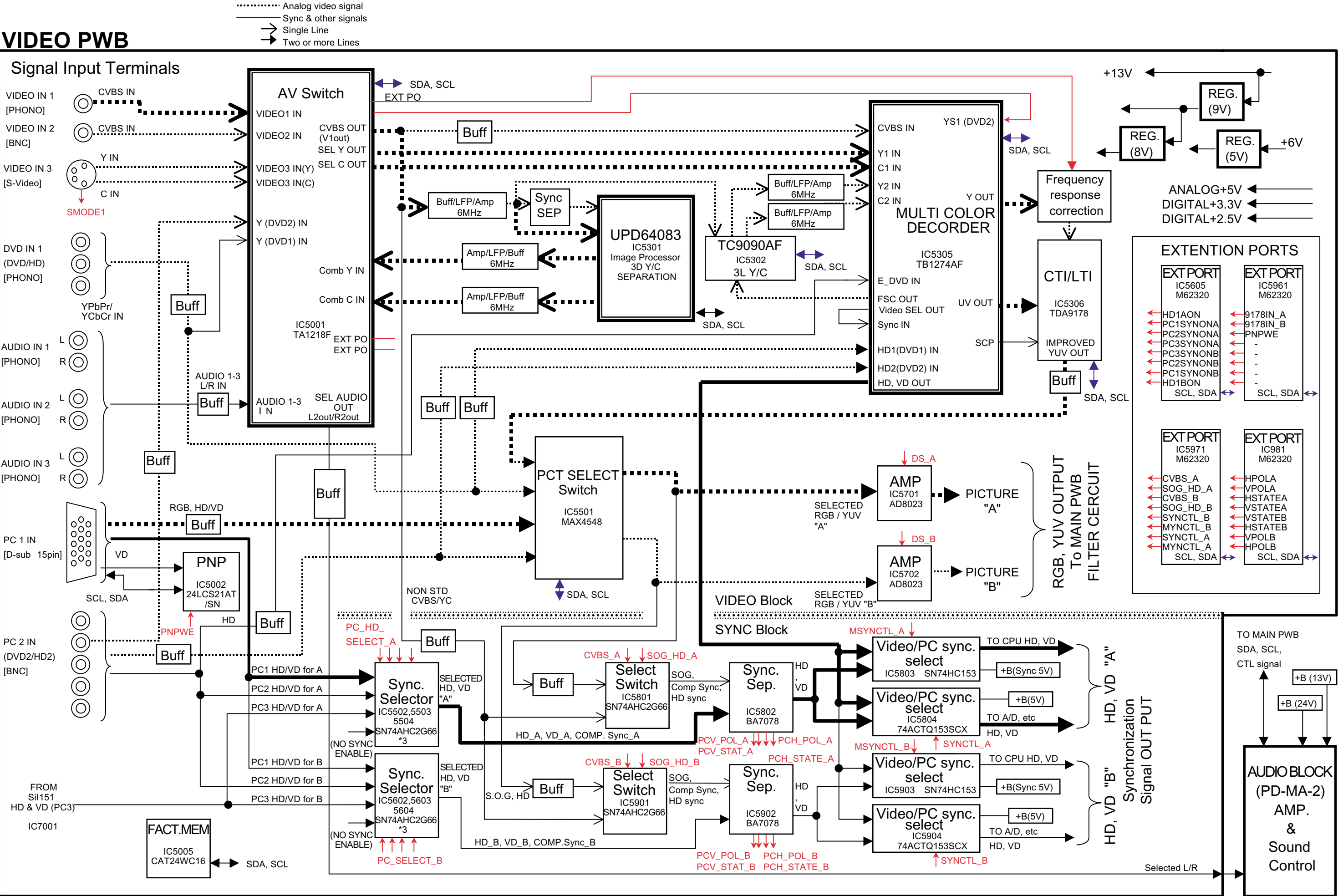
Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		57	VOUT_GEV2	Digital video signal (G)		DSP → MAIN
		58	VOUT_GEV1	Digital video signal (G)		DSP → MAIN
		59	VOUT_GEV0	Digital video signal (G)	LSB	DSP → MAIN
		60	GND2	GND		
		61	VIO_RODD7	Digital video signal (R)	MSB	DSP → MAIN
		62	VIO_RODD6	Digital video signal (R)		DSP → MAIN
		63	VIO_RODD5	Digital video signal (R)		DSP → MAIN
		64	VIO_RODD4	Digital video signal (R)		DSP → MAIN
		65	GND2	GND		
		66	VIO_RODD3	Digital video signal (R)		DSP → MAIN
		67	VIO_RODD2	Digital video signal (R)		DSP → MAIN
		68	VIO_RODD1	Digital video signal (R)		DSP → MAIN
		69	VIO_RODD0	Digital video signal (R)	LSB	DSP → MAIN
		70	GND2	GND		
		71	VOUT_REV7	Digital video signal (R)	MSB	DSP → MAIN
		72	VOUT_REV6	Digital video signal (R)		DSP → MAIN
		73	VOUT_REV5	Digital video signal (R)		DSP → MAIN
		74	VOUT_REV4	Digital video signal (R)		DSP → MAIN
		75	GND	GND		
		76	VOUT_REV3	Digital video signal (R)		DSP → MAIN
		77	VOUT_REV2	Digital video signal (R)		DSP → MAIN
		78	VOUT_REV1	Digital video signal (R)		DSP → MAIN
		79	VOUT_REV0	Digital video signal (R)	LSB	DSP → MAIN
		80	GND	GND		
		81	AMDP_H2	Not used		
		82	AMDP_V2	Not used		
		83	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		84	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		85	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		86	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		87	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		88	GND2	GND		
		89	GND2	GND		
		90	GND2	GND		
		91	GND2	GND		
		92	GND2	GND		
		93	GND2	GND		
		94	GND2	GND		
		95	AMDP_VO	Vertical sync signal for DSP circuit		MAIN → DSP
		96	AMDP_HO	Horizontal sync signal for DSP circuit		MAIN → DSP
		97	GND2	GND		
		98	AMDP_CKO	Clock signal for DSP circuit		MAIN → DSP
		99	GND2	GND		
		100	GND2	GND		
		101	VIN_BODD7	Digital video signal (B/Pb)	MSB	MAIN → DSP
		102	VIN_BODD6	Digital video signal (B/Pb)		MAIN → DSP
		103	VIN_BODD5	Digital video signal (B/Pb)		MAIN → DSP
		104	VIN_BODD4	Digital video signal (B/Pb)		MAIN → DSP

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		105	GND2	GND		
		106	VIN_BODD3	Digital video signal (B/Pb)		MAIN → DSP
		107	VIN_BODD2	Digital video signal (B/Pb)		MAIN → DSP
		108	VIN_BODD1	Digital video signal (B/Pb)		MAIN → DSP
		109	VIN_BODD0	Digital video signal (B/Pb)	LSB	MAIN → DSP
		110	GND2	GND		
		111	VIN_BEV7	Digital video signal (B/Pb)	MSB	MAIN → DSP
		112	VIN_BEV6	Digital video signal (B/Pb)		MAIN → DSP
		113	VIN_BEV5	Digital video signal (B/Pb)		MAIN → DSP
		114	VIN_BEV4	Digital video signal (B/Pb)		MAIN → DSP
		115	GND2	GND		
		116	VIN_BEV3	Digital video signal (B/Pb)		MAIN → DSP
		117	VIN_BEV2	Digital video signal (B/Pb)		MAIN → DSP
		118	VIN_BEV1	Digital video signal (B/Pb)		MAIN → DSP
		119	VIN_BEV0	Digital video signal (B/Pb)	LSB	MAIN → DSP
		120	GND2	GND		
		121	VIN_GODD7	Digital video signal (G/Y)	MSB	MAIN → DSP
		122	VIN_GODD6	Digital video signal (G/Y)		MAIN → DSP
		123	VIN_GODD5	Digital video signal (G/Y)		MAIN → DSP
		124	VIN_GODD4	Digital video signal (G/Y)		MAIN → DSP
		125	GND2	GND		
		126	VIO_GODD3	Digital video signal (G/Y)		MAIN → DSP
		127	VIN_GODD2	Digital video signal (G/Y)		MAIN → DSP
		128	VIN_GODD1	Digital video signal (G/Y)		MAIN → DSP
		129	VIN_GODD0	Digital video signal (G/Y)	LSB	MAIN → DSP
		130	GND2	GND		
		131	VIN_GEV7	Digital video signal (G/Y)	MSB	MAIN → DSP
		132	VIN_GEV6	Digital video signal (G/Y)		MAIN → DSP
		133	VIN_GEV5	Digital video signal (G/Y)		MAIN → DSP
		134	VIN_GEV4	Digital video signal (G/Y)		MAIN → DSP
		135	GND2	GND		
		136	VIN_GEV3	Digital video signal (G/Y)		MAIN → DSP
		137	VIN_GEV2	Digital video signal (G/Y)		MAIN → DSP
		138	VIN_GEV1	Digital video signal (G/Y)		MAIN → DSP
		139	VIN_GEV0	Digital video signal (G/Y)	LSB	MAIN → DSP
		140	GND2	GND		
		141	VIN_RODD7	Digital video signal (R/Pr)	MSB	MAIN → DSP
		142	VIN_RODD6	Digital video signal (R/Pr)		MAIN → DSP
		143	VIN_RODD5	Digital video signal (R/Pr)		MAIN → DSP
		144	VIN_RODD4	Digital video signal (R/Pr)		MAIN → DSP
		145	GND	GND		
		146	VIN_RODD3	Digital video signal (R/Pr)		MAIN → DSP
		147	VIN_RODD2	Digital video signal (R/Pr)		MAIN → DSP
		148	VIN_RODD1	Digital video signal (R/Pr)		MAIN → DSP
		149	VIN_RODD0	Digital video signal (R/Pr)	LSB	MAIN → DSP
		150	GND2	GND		

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		151	VIN_REV7	Digital video signal (R/Pr)	MSB	MAIN → DSP
		152	VIN_REV6	Digital video signal (R/Pr)		MAIN → DSP
		153	VIN_REV5	Digital video signal (R/Pr)		MAIN → DSP
		154	VIN_REV4	Digital video signal (R/Pr)		MAIN → DSP
		155	GND	GND		
		156	VIN_REV3	Digital video signal (R/Pr)	LSB	MAIN → DSP
		157	VIN_REV2	Digital video signal (R/Pr)		MAIN → DSP
		158	VIN_REV1	Digital video signal (R/Pr)		MAIN → DSP
		159	VIN_REV0	Digital video signal (R/Pr)		MAIN → DSP
		160	GND2	GND		

BLOCK DIAGRAMS

VIDEO PWB



MAIN PWB

